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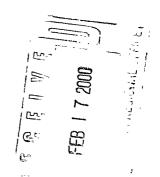
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January 2000

PREPARED FOR

DISCOUNT CLEANERS WILSON, NORTH CAROLINA

COMPREHENSIVE SITE ASSESSMENT

Discount Cleaners Wilson, North Carolina

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Discount Cleaners
Wilson, North Carolina

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COMPREHENSIVE SITE ASSESSMENT REPORT DISCOUNT CLEANERS WILSON, NORTH CAROLINA

January 2000

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ARCADIS GERAGHTY&MILLER Table of Contents

EXECUTIVE SUMMARY	iv
1. INTRODUCTION AND SITE HISTORY	1-1
1.1 SITE DESCRIPTION AND TOPOGRAPHY	1-1
1.2 PREVIOUS INVESTIGATIONS	1-1
2. POTENTIAL RECEPTORS SURVEY	2-1
3. REGIONAL AND SITE SPECIFIC GEOLOGY	3-1
3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY	3-1
3.2 SITE-SPECIFIC GEOLOGY AND HYDROGEOLOGY	3-1
3.3 GROUNDWATER FLOW SYSTEM	3-2
3.3.1 Groundwater Flow Direction	3-2
3.3.2 Hydraulic Gradients	3-2
3.3.3 Hydraulic Properties	3-2
3.3.4 Groundwater Flow Velocity	3-4
4. SITE ASSESSMENT PROGRAM	4-1
4.1 MONITOR WELL INSTALLATION	4-1
4.2 DECONTAMINATION PROCEDURES	4-2
4.3 CONTAINMENT OF DRILLING CUTTINGS	4-2
4.4 MONITOR-WELL DEVELOPMENT	4-2
4.5 MONITOR-WELL SURVEYING	4-3
4.6 MONITOR-WELL SAMPLING	4-3
5. RESULTS	5-1
6. CONCLUSIONS	6-1
7 DEEEDENCES	7.4

Table of Contents

Tables

- 2-1. Adjacent Property Owners.
- 3-1. Groundwater Water-Level Data.
- 4-1. Summary of Analytical Results for Groundwater Sampling September 9, 1999.
- 4-2. Groundwater Field Sampling Parameters.

Figures

- 1-1. Site Location.
- 1-2. Site Layout.
- 2-1. Adjacent Properties.
- 3-1. Cross Section Locations.
- 3-2. A-A' Geologic Cross Section.
- 3-3. B-B' Geologic Cross Section.
- 3-4. Groundwater Potentiometric Surface Elevations, September 9, 1999.
- 3-5. Groundwater Potentiometric Surface Elevations, December 6, ,1999.
- 4-1. Monitor Well Locations.
- 5-1. Volatile Organic Concentration Map.
- 5-2. Transformations of Chlorinated Aliphatic Hydrocarbons.

Appendices

- A. LAW Limited Environmental Site Assessment Report, May 4, 1998.
- B. LAW Report of Additional Investigation, August 21, 1998.
- C. Well Construction Records.
- D. In-Situ Aquifer Test Results.
- E. Laboratory Analytical Data Reports.
- F. Data Review and Validation.

COMPREHENSIVE SITE ASSESSMENT REPORT

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

In July, 1999, ARCADIS Geraghty & Miller of North Carolina, Inc. (ARCADIS Geraghty & Miller) was retained by Koretizing of Wilson, Inc. to perform a Comprehensive Site Assessment (CSA) at Discount Cleaners in Wilson, North Carolina (the site). The site, currently a pick-up depot for Williamson Cleaners of Wilson, North Carolina, previously operated as a full service dry cleaners.

Prior investigations by LAW Engineering and Environmental Services, Inc. (LAW) reported concentrations of chlorinated solvents in excess of regulatory standards in groundwater at the site. LAW also collected soil samples in the vicinity of the former dry cleaning machine. Laboratory analytical results indicated that soil beneath the site was impacted; however, the detected constituents were below the Inactive Hazardous Sites Soil Remediation Goals (SRGs). Due to the scope of the investigations performed by LAW the extent of impacted soil and groundwater was not fully defined. The purpose of this CSA is to define the vertical and horizontal extent of impacted media.

A receptor survey of surrounding properties, conducted by LAW in April 1998 (Appendix B), indicated that 11 water supply wells are located within 1,500 feet of the site. Ten of the wells are no longer in use, but have not been properly abandoned. Well 11 (Drawing 7, Appendix B) is located approximately 1,100 feet cross-gradient from the site (LAW, 1998) and is currently active. All other residences and businesses in the area are supplied water by the City of Wilson.

Groundwater sampling results reported concentrations of tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-Dichloroethene (cis-1,2-DCE) above the 15A NCAC 2L standards in monitor well MW-6. PCE was detected above the established standard in groundwater from MW-3 as well. The presence of TCE and cis-1,2-DCE indicate that natural degradation of PCE is occurring at the site. Two other compounds, chloroform and bromodichloromethane, were detected in groundwater at the site in concentrations exceeding groundwater standards; however, these two compounds are not typically associated with the dry cleaning process but may be associated with underground sanitary sewer lines located on the property.

The horizontal extent of impacted groundwater has been defined downgradient by monitor well MW-3 and laterally by MW-2 and MW-5. The vertical extent of impacted groundwater has been defined by deep monitor well MW-6.

COMPREHENSIVE SITE ASSESSMENT REPORT

INTRODUCTION AND SITE HISTORY

1. INTRODUCTION AND SITE HISTORY

The following section provides a historical summary of Discount Cleaners (the Site), located in Wilson, North Carolina. The location of the site is shown on Figure 1-1 and the site layout is shown on Figure 1-2. This facility had operated as a full service dry cleaners since 1985 before the present operation purchased the business in 1993. Tetrachloroethene (PCE) was used as the cleaning solvent. The dry cleaning machine was converted to a closed-loop system by the present operator in 1993. The dry cleaning machine has been de-activated since late 1997 or early 1998 and the facility currently operates as a pick-up depot for Williamson Cleaners in Wilson, North Carolina.

1.1 SITE DESCRIPTION AND TOPOGRAPHY

The site is located at the Fikewood Plaza in Wilson, North Carolina. The location of the site is shown on Figure 1-1. The topography of the site is generally flat with a slight slope to the south-southeast. The area surrounding the site consists of paved parking, an attached strip mall, and a residential neighborhood to the south (Figure 1-2). Ground surface elevations at the site are approximately 130 feet above mean sea level (ft msl). Surface-water drainage from the site flows into a storm water system located in the parking lot. Based on a review of the United States Geological Survey (USGS) Quadrangle map of Wilson, North Carolina, no surface water receptors are located within 1,500 feet of the site; however, Toisnot Swamp is located approximately 4,000 feet to the east. Regional drainage of surface water is to the swamp.

1.2 PREVIOUS INVESTIGATIONS

LAW Engineering and Environmental Services, Inc. (LAW) conducted a Limited Site Assessment (LSA) at the site on April 23, 1998 to determine if PCE or other related compounds were present in soil or groundwater at the site. The LSA report completed by LAW is included in Appendix A. Analytical results from soil samples collected 0.5 – 1.5 feet below land surface (ft bls) indicated that PCE, trans-1,2-dichloroethene (trans-1,2-DCE), cis-1,2-Dichloroethene (cis-1,2-DCE), and trichloroethene (TCE) were present at the site but, the concentrations were below the North Carolina Inactive Hazardous Sites Soil Remediation Goals (SRGs) (Table 1, Appendix A).

Ground water analytical data collected on April 23, 1998 as a part of the LSA indicated that PCE and TCE were present at concentrations exceeding the groundwater standards as established in Title 15A of the North Carolina

COMPREHENSIVE SITE ASSESSMENT REPORT

INTRODUCTION AND SITE HISTORY

Administrative Code Subchapter 2L (15A NCAC 2L) (Table 1, Appendix A). On June 17, 1998 the North Carolina Department of Environment and Natural Resources Division of Water Quality (NCDENR) was notified that a release of dry cleaning solvents occurred at the site and that PCE and TCE were present in groundwater in excess of the 15A NCAC 2L standards. LAW recommended additional assessment at the site to further delineate the extent of impacted media (LAW, 1998).

On June 25, 1998 LAW performed an additional site assessment and installed ten temporary monitoring wells for groundwater sampling at the site. The LAW Report of Additional Assessment is included in Appendix B. Laboratory analytical results showed that groundwater from three of the temporary monitoring wells exceeded 15A NCAC 2L standards for PCE and TCE (Table 1, Appendix B). However, due to the locations of the temporary monitor wells (Drawing 2, Appendix B) the extent of impacted groundwater was not fully defined. LAW recommended that further investigation be completed at the site (LAW, 1998).

In July 1999, ARCADIS Geraghty & Miller was retained by Koretizing to conduct additional investigation and complete a CSA. The objective of this assessment is to delineate the horizontal and vertical extent of impacted media. More specifically, this investigation addresses the following:

- determine if offsite receptors are being impacted;
- evaluate the extent of impacted media;
- determine the overall groundwater flow direction;
- determine the site specific hydrogeology.

The remainder of this report details the methods used and the results of the CSA investigation.

COMPREHENSIVE SITE ASSESSMENT REPORT

POTENTIAL RECEPTORS SURVEY

2. POTENTIAL RECEPTORS SURVEY

LAW performed a receptor survey during work conducted in June, 1998 to determine if surrounding property owners were potentially affected by past site activities. LAW identified 11 private water supply wells within 1,500 feet of the site. All of the wells except one located approximately 1,100 feet, cross-gradient, from the site were determined to be inactive, however, none had been appropriately abandoned. The approximate locations of the residential supply wells are shown in Drawing 7, Appendix B. Well number 11, located east of the site is the only active well, as reported by LAW (August, 1998).

COMPREHENSIVE SITE ASSESSMENT REPORT

REGIONAL AND SITE SPECIFIC GEOLOGY

3. REGIONAL AND SITE SPECIFIC GEOLOGY

3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located near the western boundary (Fall Line) of the Inner Coastal Plain Physiographic region (Wilson, 1979). The surficial water-bearing zone in the Inner Coastal Plain consists primarily of post-Yorktown, Quaternary-age deposits near land surface. The surficial aquifer extends over a large part of the Coastal Plain. The average thickness of the surficial aquifer is 35 feet; the average proportion of permeable material is 79 percent; and the average estimated hydraulic conductivity is 79 feet/day (Winner and Coble, 1989).

The Yorktown confining unit underlies the surficial aquifer, separating it from the Yorktown aquifer. The confining unit is composed of clay and sandy clay that may contain fine sand or shell. The average thickness of the confining unit in the Inner Coastal Plain is 22 feet. Toward the west near the Fall Line, the average regional thickness is 13 feet. It is reportedly thinnest (10 feet thick) from Wilson to Pamlico Counties (Winner and Coble, 1989).

The surficial water-bearing zone almost entirely overlies the Yorktown confining unit and Yorktown aquifer. The Yorktown aquifer receives recharge from the surficial water-bearing zone; however, the average proportion permeable material in the Yorktown confining unit is only 15 percent (Winner and Coble, 1989).

3.2 SITE-SPECIFIC GEOLOGY AND HYDROGEOLOGY

Three primary lithologic units were encountered to a depth of 31 feet at the site. The upper unit consists of orange-brown to gray silty sand to sandy silt approximately 5 to 8 feet thick. Below this unit lies a tight, gray, confining silty clay approximately 10 feet thick overlying gray, sandy silt to silty sand of unknown thickness.

Two geologic cross sections were created using the lithologic information from the monitor-well boreholes. The cross section locations are presented on Figure 3-1 and cross section details are shown on Figures 3-2 and 3-3. Cross section A-A' extends across the site from northeast to southwest and includes lithologic information from wells MW-1, MW-2, and MW-5. Cross section B-B' extends across the site from northwest to southeast and includes lithologic information from wells MW-1, MW-3, and MW-4.

COMPREHENSIVE SITE ASSESSMENT REPORT

REGIONAL AND SITE SPECIFIC GEOLOGY

The cross sections illustrate the vertical sequence of the three lithologic units present at the site. The cross sections also illustrate that a water table is present in the upper sandy silt unit at the site.

3.3 GROUNDWATER FLOW SYSTEM

3.3.1 Groundwater Flow Direction

Water-level data collected from each of the monitor wells on September 9, 1999, October 25, 1999, and December 6, 1999, are presented in Table 3-1. Both the depth-to-water measurements and the converted water-level elevations are listed on the table. All elevations are based on a temporary benchmark, shown on Figure 1-2, assigned by a licensed surveyor.

The water-level elevation data from September 9, 1999 and December 6, 1999 were used to construct water-level contour maps (Figures 3-4 and 3-5). The groundwater in the shallow portion of the surficial aquifer generally flows south-southeast across the site, as indicated in Figure 3-5. This flow direction corresponds with the slight south/southeastward trending topography.

3.3.2 Hydraulic Gradients

An average horizontal hydraulic gradient in the surficial unit can be calculated by dividing the difference in water-level elevation of two wells by the horizontal distance between the two wells. The average horizontal hydraulic gradient between monitor wells MW-3 and MW-4 on December 6, 1999 was 0.016 feet/foot (ft/ft).

A vertical hydraulic gradient can be calculated between the surficial sandy clay unit and the deeper silty sand unit using the water-level data between adjacent wells screened in the respective intervals. The vertical hydraulic gradient is calculated by dividing the difference in water-level elevations by the distance between the center points of the two screened intervals. Based on the water-level data from December 6, 1999 a downward vertical gradient was present between monitor well pair MW-1/MW-6 (-0.225 ft/ft), suggesting groundwater is moving from shallower to deeper portions of the aquifer.

3.3.3 Hydraulic Properties

In-situ aquifer tests (slug tests) were conducted at the site on December 7, 1999. Slug tests were conducted on shallow monitor wells MW-2 and MW-6 to determine

COMPREHENSIVE SITE ASSESSMENT REPORT

REGIONAL AND SITE SPECIFIC GEOLOGY

the average hydraulic conductivity for the shallow silty clay unit at the site. Slug testing was also performed on deeper monitor well MW-1 to determine the hydraulic conductivity for the lower silty sand unit.

The slug tests were conducted by installing a pressure transducer into the test well approximately 1 foot above the bottom of the well. The transducer was connected to a HermitTM data logger, which was programmed to record water-level measurements at logarithmic intervals. Once the data logger was installed in the well, it was activated so that it would begin recording water-level measurements. Within seconds of activation, a solid cylinder (slug) of known volume was lowered into the test well, creating an instantaneous, positive change in the water-level. The rate at which the water-level recovered back to static conditions was recorded for each of the three monitor well tested (MW-1, MW-2, and MW-6). Once static water level was achieved in MW-1 a slug-out test was performed to confirm the results of the slug in test. For the slug out test the data logger was activated, and the slug was immediately removed from the well, creating an instantaneous, negative change in the water-level and the water-level recovery rate was recorded as slug-out data. The transducer was then removed from the well and decontaminated with a soapy water solution prior to installation into the next test well.

Due to the slow recovery rate of the shallow aquifer and the fully penetrating nature of the shallow wells only slug-in tests were performed on monitor wells MW-2 and MW-6. Typically, slug-out tests are performed on wells where the screen interval straddles the water column to accommodate for false data obtained during saturation and drainage of the sand filter pack of the well. However, in both shallow monitor wells tested the static water-level was above the well screen and sand filter pack, therefore, the effects of filter pack saturation were not observed and slug-out tests were not necessary.

Analysis of the slug-test data (slug in) using the AQTESOLV™ software program provided hydraulic conductivity values of 3.762 x 10⁻⁵ centimeters per second (cm/sec) and 1.061 x 10⁻⁴ cm/sec for monitor wells MW-2, and MW-6 respectively. Using this information the average hydraulic conductivity of the shallow portion of the silty sand unit is 7.186 x 10⁻⁵ cm/sec (0.204 ft/day). The slug test data for the deep well MW-1 provided an average hydraulic conductivity of 2.411 x 10⁻² cm/sec (68.33 ft/day) for the deep silty sand aquifer. Graphical plots of the water-level displacement data versus time were generated for each of these monitor wells and are presented in Appendix D.

COMPREHENSIVE SITE ASSESSMENT REPORT

REGIONAL AND SITE SPECIFIC GEOLOGY

3.3.4 Groundwater Flow Velocity

Groundwater flow in the shallow portion of the surficial aquifer at the site, as determined from water-level elevation data collected December 6, 1999 is toward the south-southeast. The average hydraulic gradient of the site, based on the December 1999 water-level data, is 0.016 ft/ft. An average interstitial groundwater flow velocity for the shallow portion of the surficial aquifer can be determined using a form of the Darcy equation as follows:

$$V = \frac{K}{Ne} \left(\frac{dh}{dl} \right)$$

where:

V = groundwater flow velocity

K = hydraulic conductivity

<u>dh</u> = groundwater gradient

đl

Ne = effective porosity (assumed to be 10 percent)

substituting values determined by ARCADIS Geraghty & Miller:

$$K = 0.0204 \text{ ft/day}$$

$$dh = 0.016$$
 ft/ft

dl

then
$$V_1 = 0.0204 \text{ ft/day } (0.016 \text{ ft/ft})$$

.10

 $V_1 = 0.0033 \text{ ft/day} = 1.19 \text{ ft/year}.$

The calculated groundwater flow rate above represents an average horizontal velocity of groundwater at the site. Heterogeneity in the aquifer could lead to higher or lower localized rates of flow.

COMPREHENSIVE SITE ASSESSMENT REPORT

SITE ASSESSMENT PROGRAM

4. SITE ASSESSMENT PROGRAM

The previous investigations performed by LAW indicated that impacted soil and groundwater are present at the site. Because impacted media have been confirmed, this investigation focuses on the delineation of impacted soil and groundwater.

4.1 MONITOR WELL INSTALLATION

Five shallow Type II wells (MW-2 through MW-6) and one deep Type III telescoping monitor well (MW-1) were installed between September 2, 1999 and September 3, 1999 to delineate the extent of impacted groundwater at the site. The placement of the monitor wells was determined using soil and groundwater data collected by LAW (Appendices A and B). Monitor well locations are shown on Figure 4-1 and well construction logs are included in Appendix C.

The shallow wells were installed using hollow stem augers and a truck mounted drill rig. An 8-inch diameter borehole was drilled to a depth of 18 ft bls (MW-2) and 10 ft bls (MW-3 through MW-6). To characterize the geology of the site, soil samples were collected from the borings at 5-foot intervals. Each sample was described for lithology, appearance, and odor by an ARCADIS Geraghty & Miller representative.

Monitor wells MW-2 through MW-6 were constructed of 2-inch Schedule 40 PVC screen and riser. Ten-slot (0.010-inch) screen was selected due to the sand and silt content of the formation. The wells were constructed with 5 feet of screen and 5 feet of riser. After the screen and riser were installed, a silica sand filter pack was placed in the annular space between the well screen and borehole wall, from the base of the boring to approximately 2 feet above the top of the screen. Bentonite pellets were then placed on top of the filter pack to form a seal approximately 2-feet thick. After hydration of the bentonite pellets, the well was grouted to within a few inches of the ground surface. A water-tight, locking, expansion cap was installed on top of the 2-inch diameter casing, and a steel, man-hole type, protective cover and concrete pad were installed slightly above grade over the top of the well.

The borehole for the deep monitor well, MW-1, was drilled using both hollow stem auger and mud rotary techniques. A 6.5-inch-diameter black iron surface casing was installed to reduce the potential for downward migration of impacted soil and groundwater from the upper zone into the lower aquifer. The surface casing was installed to a depth of 12 feet, or 2 feet into the clay confining unit, within a 12-inch diameter borehole. The surface casing was grouted in place and allowed to cure

COMPREHENSIVE SITE ASSESSMENT REPORT

SITE ASSESSMENT PROGRAM

overnight. The boring was extended to a depth of 31 ft bls using a 6-inch-diameter tricone mud rotary bit.

Upon reaching depth, the monitor well was installed in the same manner as the Type II wells using 10 feet of screen and 21 feet of riser. Well-construction logs for the six monitor wells installed by ARCADIS Geraghty & Miller were prepared using information collected in the field and are presented in Appendix C.

4.2 DECONTAMINATION PROCEDURES

The drill rig and all downhole drilling and sampling equipment were decontaminated on site by steam cleaning prior to initial drilling, between boreholes, and prior to leaving the site. The decontamination site was located in an area so that runoff would not compromise the integrity of the monitor wells. Water and debris generated during decontamination procedures were placed in DOT approved 55-gallon drums and transported off site to a licensed disposal facility by GARCO, Inc (GARCO). of Asheboro, North Carolina.

4.3 CONTAINMENT OF DRILLING CUTTINGS

Drilling cuttings generated during installation of the monitor wells were containerized in DOT approved 55-gallon drums and stored on site pending disposal. Data collected from groundwater samples were used for characterization of drilling cuttings for waste disposal. Drum disposal was handled by GARCO.

4.4 MONITOR-WELL DEVELOPMENT

Residual clay, silt, and fine sands which collected in the silica sand filter packs and bottoms of the monitor wells were removed by developing the wells. Development was performed by removing water and solids from the wells using either a peristaltic pump or a 2-inch submersible pump. The monitor wells were developed until the purge water was relatively sand-free and clear. Approximately 2 gallons of water were removed from each of the shallow monitor wells and approximately 10 gallons were removed from the deep well during development.

All purge water generated during monitor well development was containerized in DOT approved 55-gallon drums and stored onsite pending disposal. Data collected from groundwater samples were used for characterization of development water. Drum disposal was conducted by GARCO.

COMPREHENSIVE SITE ASSESSMENT REPORT

SITE ASSESSMENT PROGRAM

4.5 MONITOR-WELL SURVEYING

A water-level measuring point (top of casing) was established at each of the monitor wells following installation. A temporary benchmark was established on site using an existing property pin, arbitrary x, y coordinates, and an arbitrary elevation. The monitor well locations and relative elevations were then surveyed by a licensed surveyor from the ARCADIS Geraghty & Miller survey department.

4.6 MONITOR-WELL SAMPLING

Groundwater samples were collected from monitor wells MW-1 through MW-6 on September 9, 1999. A summary of analytical results can be found in Table 4-1 and complete laboratory reports are presented in Appendix E. Groundwater samples were collected from the monitor wells using either a peristaltic pump or a 2-inch submersible pump and disposable polyethylene tubing. Groundwater sampling was conducted in accordance with ARCADIS Geraghty & Miller standard quality assurance protocols, which meet or exceed NCDENR requirements.

Prior to sampling, monitor wells MW-1 through MW-5 were purged until all water had been evacuated from the well using a peristaltic pump. Monitor well MW-1 was purged of three well volumes using a 2-inch submersible pump. After purging each well and between each well volume for MW-1, an aliquot of water was collected and analyzed for pH, specific conductance, and temperature using portable meters calibrated in the field. A summary of final field parameter data is presented in Table 4-2. This information was referenced to ensure that these parameters had stabilized prior to collection of the groundwater sample designated for laboratory analysis.

Once collected, the groundwater samples were placed in appropriately labeled, laboratory supplied containers and packed on ice pending shipment to the analytical laboratory. Water samples collected in the field remained in the presence of a project representative until shipment via overnight courier (Federal Express) to the laboratory. A completed chain-of-custody record was provided with each cooler containing samples. Groundwater samples collected from MW-1 through MW-6 were shipped to Pace Analytical Services, Inc. (Pace), in Huntersville, North Carolina for analysis using United States Environmental Protection Agency (USEPA) method 6230D.

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RESULTS

5. RESULTS

The following section provides a summary of analytical results for groundwater samples collected at the site on September 9, 1999. Groundwater analytical data for the six permanent monitor wells are summarized in Table 4-1.

Groundwater analytical data are summarized in Table 4-1 and complete analytical results are included in Appendix E. The reported groundwater analytical results were compared to the 15A NCAC 2L standards. Concentrations exceeding the standards were detected in each of the six wells (MW-1 through MW-6). Detected constituents include PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1,1,2-Tetrachloroethane (1,1,1,2-PCA), isopropyl ether, methylene chloride, naphthalene, bromodichloromethane, and chloroform. Methylene chloride was detected in all groundwater samples excluding MW-2; however, due to the presence of methylene chloride in the trip blank all samples were classified as non-detect for this compound. A summary of data validation is included in Appendix F. VOC concentration data and sample locations are shown on Figure 5-1.

PCE is commonly used as a dry cleaning solvent and is the parent compound of various breakdown products detected in the groundwater samples collected at the site. PCE naturally breaks down into TCE, which in turn breaks down into cis-1,2-DCE, trans-1,2-DCE or 1,1-DCE as shown on Figure 5-2. Cis-1,2-DCE and trans-1,2-DCE can naturally degrade to 1,2-DCA and eventually to vinyl chloride or they can break down directly to vinyl chloride. Similarly, 1,1-DCE will break down directly to vinyl chloride (USEPA, 1998). Vinyl chloride then degrades sequentially to ethene, ethane and finally carbon dioxide and water. The presence of these breakdown compounds in soil or groundwater indicates that PCE has been subjected to attenuation by natural degradation.

PCE was detected in monitor wells MW-6 and MW-3 at concentrations of 1,800 μ g/L and 1.4 μ g/L respectively. The 15A NCAC 2L standard for PCE is 0.7 μ g/L as shown in Table 4-1. Three PCE degradation products, TCE, cis-1,2-DCE, and trans-1,2-DCE were also detected in MW-6 (96 μ g/L, 380 μ g/L, and 2.2 μ g/L respectively). As stated above, the presence of these compounds in groundwater samples gives evidence that natural degradation of PCE is occurring at the site.

1,1,1,2-PCA was also detected in groundwater from monitor well MW-6 at a concentration of 6.7 μ g/L. No 15A NCAC 2L standard is currently published for 1,1,1,2-PCA, therefore, and detectable concentration is considered above standard, according to the 15A NCAC 2L. This compound has no common commercial

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RESULTS

applications; however, it can be formed as a byproduct during the manufacturing process of PCE (Howard, 1990).

Several other constituents detected in the groundwater at the site, including bromodichloromethane and chloroform, are not associated with the dry cleaning process. Therefore the presence of these compounds is attributed to in-ground sanitary sewer and water supply lines.

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CONCLUSIONS

6. CONCLUSIONS

Based on this CSA, the following conclusions may be drawn: the site geology, hydrogeology, soil quality, and groundwater quality are well understood; and sufficient data have been compiled to evaluate corrective action alternatives. Specifically, the primary conclusions that can be identified based on the site characterization include the following.

- The extent of soil contamination was investigated by LAW and is presented in the LSA dated May 4, 1998 (Appendix A). Soil samples were collected from the area surrounding the former dry-cleaning machine and outside the building indicate that a possible source area exists beneath the former dry-cleaning machine (Drawing 2, Appendix 1). Two breakdown products of PCE (cis-1,2-DCE and TCE) were detected in soil sample B-2 which indicate that natural degradation of PCE in the soil is occurring at the site. All detected compounds were below SRGs.
- The extent of impacted groundwater has been defined horizontally by MW-2, MW-3, MW-4, and MW-5 and vertically by MW-1. Analytical data show that MW-5, farthest downgradient from the source, is not impacted with VOCs related to site operations. Analytical results of groundwater from MW-1 show that the chlorinated solvents have not impacted the deep aquifer encountered at the site.
- The presence of several breakdown products of PCE in the soil and groundwater indicate that degradation by natural degradation of PCE is currently occurring at the site.
- There are 11 water supply wells located within 1,500 feet of the site. Only one of the supply wells is active; however, none have been properly abandoned. The one active supply well is located 1,100 feet cross-gradient from the site and is not likely a receptor of groundwater from the site.
- The site hydrogeology was defined using information collected from monitor well water-level data. Three primary lithologic units were encountered to a depth of 31 feet at the site. The upper unit consists of orange-brown to gray silty sand to sandy silt approximately 5 to 8 feet thick. Below this unit lies a tight, gray, silty clay approximately 10 feet thick overlying gray, sandy silt to silty sand of unknown thickness. No VOCs were detected in well MW-1 which monitors the groundwater immediately beneath the tight gray silty clay.

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CONCLUSIONS

• The groundwater flow direction is generally to the southeast with an average flow velocity of 1.19 ft/yr as calculated using groundwater level data collected on December 6, 1999. The average hydraulic gradient at the site is 0.016 ft/ft and the average vertical hydraulic gradient is -0.225 ft/ft between the surficial silty sand unit and the deep silty sand unit, suggesting that groundwater's natural movement is from the aquifer shallow document. However, the silty clay until which lies beneath the upper zone, is 10 feet thick. Based upon water quality data from well MW-1, this clay is effectively retarding the downward migration of the constituents in the shallow groundwater zone.

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7. REFERENCES

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COMPREHENSIVE SITE ASSESSMENT REPORT

TABLES

Table 2-1. Properties located within 1500 feet of Discount Cleaners. Wilson, North Carolina.

	Tax Lot I	ID	Property Own	ner Name	Proper	ty Owner Addres	s	
Map	Block	Parcel	Last	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	· Wilson	NC	27893
108	001	0003	Vanlandingham	Robert	1134 Anderson St.	Wilson	NC	27893
108	001	0004	Sanders	Dorthea	1701 E. Nash St.	Wilson	NC	27893
108	001	0005	Nicholson	William	40 Macon Ave.	Wilson	NC	27893
108	001	0006	Cooper	Carol	1705 E. Nash St.	Wilson	· NC	27893
108	001	. 0007	Sauls	Elnora	1707 E. Nash St.	Wilson	NC :	27893
108	.* *	0008	Carter	Ezzard	1709 E. Nash St.	Wilson	NC	27893
108	001	0009	Leach	George	PO Box 2701	Wilson	NC S	27893
108	002		Whitehead	Herbert	PO Box 1526	Wilson	NC.	27893
108	002	0002	Whitehead	Herbert	PO Box 1526	Wilson	NC	27893
108	002	0003	Whitehead	Herbert	PO Box 1526	Wilson	NC	27893
108	002	0004	Grady	Sutton	1515 Woodridge Ave.	Wilson	NC	27893
108	002	0005	Grady	Sutton	1515 Woodridge Ave.	Wilson	NC	27893
108	002	0006	Grady	Sutton	1515 Woodridge Ave.	Wilson	NC	27893
108	002	-0007	Knight	Penny	17-7 Atlantic St. Ext.	Wilson	NC.	27893
108	002	0008	Parramore	Alton	310 N. Pearson St.	Wilson	NC	27893
108	003	0001	Leach	George	PO Box 2701	Wilson	NC	27893
108	. 003	0002	Léach	George '	PO Box 2701	Wilson	NC:	27893
108	003	0004	Massey	Mary	308 Tacoma St.	Wilson	NC .	27893
108	004	0001	Dildy	John	1001 W. Nash St.	Wilson	NC	27893
108	004	0002	Dildy	John	1001 W. Nash St.	Wilson	NC	27893
108	004	0003	City of Wilson		PO Box 10	Wilson	NC	27893
108	004	0004	Woodard	Herbert	2417 Bel Air Ave.	Wilson	NC	27893
108	004	0006	Jones	Cleo	PO Box 4004	Wilson	NC	27893
108	004	0007	Jones	Cleo	PO Bòc 4004	Wilson	NC NC	27893
108	004	0008	Hoskins	Lonnie	1229 Westmoreland Dr.	Wilson	NC NC	27893
108	004	0009	Böltón	William	1229 Westmoreland Dr.	Wilson	NC	27893
108	. 004	0010	Raberson	Nathaniel	2416 Bel Air Dr.	Wilson	" NC :	27893
108	. 004	0011	Hoskins	Joseph	2777 Melcheser Dr.	Wilson	NC .	27893
108	005	0001	McClain	Brenda	7039 Willowick Dr.	Brentwood	TN	37027
108	005	0002	Deans	Louis	410 S. Goldsboro St.	Burlington	NC	27217
108	005	0003	Womble	J.M. Jr.	1103 Brookside Dr.	Wilson	NC	27893
108	005	0004	Williams	Kenneth	1611 Atlantic St.	Wilson	NC	27893
108	005	0005	Reid	Margaret	1319 Beverly Rd,	Raleigh	NC	27600
108	005	0006	Pilkerton	Joseph	PO box 1312	Kenly	, NO	27542
108	005	0007	Harding	Eric	13200 Bermondsey Ct.	Mitchville	MD	20716
108	005	0008	Woodard	Herbert	2417 Bel Air Aye.	Wilson	NC	27893
108	. 005	. 0009	Roberson	Leroy	2209 Imperial Ave	Wilson	NC NC	27893
108	005	0010	Hoskins	Barbara	PO box 604	Wilson	NC	27893
108	005	0011	Smith ·	Carrie	701 Ward Blvd.	Wilson	NC	27893
108	005	0012	Bolton	William	1229 Westmoreland Dr.	Burlington	NC	27217
108	005	0013	Woodard	Walter	1616 Washington St.	Wilson	NC	27893
108	005	0014	Hesmer	William	2406 Runnmeade Rd.	Wilson	NC	27893
108	005	0015	Adams	Jasper	1612 Washington St.	Wilson	NC	27893
108	005	0016	Green	Willie	1610 Washington St.	Wilson	NC	27893
108%	005	24. C 0017	Green Control	Willie Company	1610 Washington St.	Wilson	NC	27893

Table 2-1. Properties located within 1500 feet of Discount Cleaners. Wilson, North Carolina.

	Tax Lot ID Property Owner Name Property Owner Address							
Map	Block	Parcel	Last	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	005	.0018	Lucas	Crystal	PO Box 181	Stantonsburg	NC	27883
108	. 005	0019	Cooper	Anna	1604 Washington St.	Wilson	, NC	27893
108	005	0020	McClain	Brenda	7039 Willowick Dr.	Brentwood	TN	37027
108	006	0001	McClain	Daniel	516 Saddle Head Dr.	Desoto	TX	75115
108	006	0002	Tolson	Margaret	PO Box 874	Wilson	NC	27893
108	006	0003	Smith	Jason	3118 Woodland Ave.	Baltimore	MD	21215
108	006	0004	Lewis	Sylvania	1607 E. Nash St.	Wilson	NC	27893
108	006	0005	Lewis	James	4305 Backford Dr.	Greensboro	NC	27407
108	006	0006	Lewis	Dwinda	1607 E, Nash St.	Wilson	NC.	27893
108	, 006	,0901	Haney	Control of the Enzage of the Control	PO Box 4206	Wilson	NC.	27893
108	006	0008	Witherspoon	Martin	230f Tranquil Dr.	Wilson	NC'	27893
108 ,	006	0010	Guess	Cora	1102 E. Vance St.	Wilson	NC	27893
108		0011	Woodard	Alma	5210 E St. SE Apt. 7	Wasington	. DC	20019
108	006	0012	Bridgers	Ruth	1621 E Nash St.	Wilson	NC	27893
108	006	0013	Ruffin	Ralph	1623 E Nash St.	Wilson	NC	27893
108	006	0014	Massey	Mary	308 Tacoma St.	Wilson	NC	27893
108 108	006 006	0015 0016	Whitehead	Herbert Sherian	PO Box 1526 4924 Ward Blvd.	Wilson Wilson	NC NC	27893 27893
108	006	0017	Speight Ward	John Ir.	308 Greenfield Blvd	Greenville	NC NC	27834
108	006	0017	Ward	John Heirs	1614 Atlantic St.	Wilson	NC .	27893
108	006	0019	Ward	Brénda	1612 Atlantic St Ext.	Wilson	NC	27893
108		0020	Locus	Jessie	912 Woodard St.	Wilson	NC A	27893
108	006	0022	Haney	James	PO Box 4141	Wilson	NC	27893
108	006	0023	Barnes	Lossie	703 Blakewood St.	Wilson	NC	27893
108	006	0024	True.	Noel	718 E.Shore Rd.	Edinburg	NY	12134
108	006	0025	Ťrue.	Noel	718 E.Shore Rd.	Edinburg	NY	12134
108	006	0026	McClain	Daniel	516 Sáddle Head Dr.	Desoto	TX	75115
108	007	0001	Edmondson .	Argusta	4302 Kenroy Rd.	Wilson	NC	27893
108	007	0002	City Of Wilson	The second control of the second seco	PO Box 10	Wilson	NC	27893
108	007	0003	Garnett	Roscoe	PO.Box 1092	Wilson	NC 1	.: 27893
108	007.	0004	Bridgers	Everette	1505 E, Nash St.	Wilson.	NC	27893
₹ 3108	· 007	0005	Bridgers /	Everette	1505 E. Nash St.	Wilson	· (NC)	27893
108	007		Bridgers	Everette.	1505 E. Nash St.	Wilson	NC NC	27893
108	007	0007	Horne	Beatrice	300 N. Reid St.	Wilson	NC	27893
108	007	0008	Council	Charles	PO Box 254	Stantonsburg	NC	27883
108	007	0009	Roberson	Nathaniel	2416 Bel Air Dr.	Wilson	NC	27893
108 .	007	0011	Tedder	Earnest	1317 Dogwood Ln.	Wilson	NC	27893
108	008	0001	Council	Charles	PO Box 254	Stantonsburg	NC	27883
108	008	0002	Roberson	Nathaniel	2416 Bel Air Dr.	Wilson	NC .	27893
108	008	0003 0004	Bullock	Tony	6810 Furman Park	Riverdale	MD	``
108	908	0004	Bullock	Tony	6810 Furman Park	Riverdale	MD	วสอกว
108	008	0005	Deans	Louise Frank	1128 Woodland Dr. PO Box 1607	Wilson	NC NC	27893. × 27893. ×
108		0007	Benson Locus	Billy	1502 Washington St.	Wilson	NC NC	27893
108	009	0007	Ward	Verona	PO box 4262	Wilson	NC NC	27893
108	009	0002	Hargrove	Walter	1401 E. Nash St.	Wilson	NC	27893
108	009	0002	Morgan	Hattie	1401 E. Nash St.	Wilson	NC	27893
100	007	0003	I Mingali	11atuc	TAON D LIMBIL OF	11 110011	110	21023

Table 2-1. Properties located within 1500 feet of Discount Cleaners. Wilson, North Carolina.

	Tax Lot ID		. Property Owne	er Name	Property	y Owner Address	8	
Мар	Block	Parcel	Last	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	009	0004	City Of Wilson		PO Box 10	Wilson	NC	27893
108	009	0006	Witherspoon	Martin	2301 Tranquil Dr.	Wilson	NC	27893
108	009	0008	Camp	W.T.	2105 W. Nash St.	. Wilson	NO	27893
109	001	. 0001	Sharpe	Collins	1714 Lipscomb Rd.	Wilson	NG	27893
: 109	1,7 33 5 , 001	0002	Haney \	Tyrone	PO Box 4206	Wilson	ŊĆ	27893
109	001	0003	Graham	Louise	1714 Lîpscomb Rd.	Wilson	NC	27893
109	001	0004	Vester Family LLC		3866 Rose Loop Rd	Nashville	NC	27856
109	001	0005	Lif Realty Trust		106 Access Rd.	Norwood	MA	02062
109	001	0006	USS Restaurant Properties Operating LP		5310 Harvest Hill Rd., Suite 270	Dallas	TX	75230
109	001	0007	City Of Wilson		PO Box 10	Wilson	NC	27893
109	001	0008	Vester Family LLC		3866 Rose Loop Rd	Nashville	NC	27856
109	002	1000	Kentucky Fried Chicken of Eastern No Inc.		PO.Box 2187	Greenville	NC NC	27836
109	002	0002	Alsondany	Waleed"	901-A Hwy, 301	Wilson	"	27893
109	002	0003	Plains Coastal Properties LLC	Specification of the second	600 SW Greenville Blyd.	Greenville	NC	27836
109	002	0004	Woodard	Walter	617 Raleigh Rd.	Wilson	NC.	27893
109		0001	Jackson	Tonya	117 Mint Lane	Nicholasville	<u> </u>	40356
109	003	0002	Alexander	William	1025 Faison St. 4924 Ward Blvd.	Wilson Wilson	NC	27893 27893
109	003 004	0003 0008	Speight	Sherian		Wilson	NC NC	27893
109 109	004	0009	Roberson Jupiter	Nathaniel Alma	2416 Bel Air Dr. 1017 E Vance St.	Wilson	NC NC	27893
109	004	0010	Lewis		1208 Owens Place NE	Washington	DC	20002
109	004	0010	Spoons	Joseph Thomas	1021 E Vance St.	Wilson	NC.	27893
109	004	0012	Cummings	Eliner	1023 E Vance St.	Wilson	NC NC	27893
109	004	0013	Cummings	Elmer	1023 E Vance St.	Wilson	NC.	27893
109	004	0014	Vick	James	1101 E Vance St	Wilson	NC NC	27893
109	004	0015	Moody	Mattie	1103 E Vance St.		NE NE	27893
109	004	0016	Rodgers	Douglas	1105 E Vance St.	Wilson	NC	27893
109	004	0017	Barnes	Earline	5008 Ward Blvd.	Wilson	NC	27893
109	004	0018	Williams	Ida	5004 Ward Blvd.	Wilson	NC	27893
109	004	0019	Jone	Doris	1026 Faison St.	Wilson	NC	27893
109	004	0020	Morgan	Bernetha	4124 Wiggins Mill Rd.	Wilson	NC	27893
109	004	0021	Farmer	James	1305 Marlow St.	Wilson	NC ,	27893
109	004	0022	Smith	Lillie "	1020 Fáison St.	Wilson	NO 😓	27893
109	· 004	0023	Green	Jeraline .	1018 Faison St.	Wilson	NC NC	27893
109	004	0024	Burke	Benjah	1014 Faison St.	Wilson	NÇ · · ·	27893
109		0025	Stevenson Stevenson	Elleen	1012 Faison St.	Wilson	<u> NC</u>	27893
109	012	0006	Wilson County Schools			Wilson	NC	
109	012	0011	Woodard	Travis	3102 Ward Blvd.	Wilson	NC	27893
109	012	0012	Jones	Henry	2208 Imperial Ave	Wilson	NC	27893
109	012	0013	Davis	Frank	1221 Queen St.	Wilson	NC	27893
109	012	0014	Bridgers	Rudolph	501 Blakewood St.	Wilson	NC	27893
109	012	0015	Branford	Charles	511 Blakewood St.	Wilson	NC	27893 27893
109	012	0016 0017	Branford	Charles	511 Blakewood St.	Wilson.	NC NC	27893
109	012	0017	Hinnant	Pearl Charles	2015 Porest Hills Rd. 511 Blakewood St.	Wilson Wilson	NC	27893
109	012	0019	Branford Brown	Charles Maureen	607 Blakewood St.	Wilson	NC NC	27893
109	012	0020	McCoy	Vincent	701 Blakewood St.	Wilson	NC	27893
109	UIZ	VV2U	McCoy	VINCENT	1 /01 Diakewood St.	WIISUII	INC	21073

Table 2-1. Properties located within 1500 feet of Discount Cleaners. Wilson, North Carolina.

	Tax Lot II)	P	roperty Owner Name	Proper	ty Owner Address		
Map	Block	Parcel	Last	. First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
109	012	0021	Barnes	Clarence	703 Blakewood St.	Wilson	NC	27893
109	012	0022	Barnes	Marilyn	PO Box 1334	Elm City	NC	27822
109	012	0023	Benson	John	PO Box 1424	Wilson	NC	27893
109	014	0001	Williams	Artelya	627 Pine St.	Spring Hope	NC	27882
109	014	0002	Hagans	Eyelyn	700 Blakewood St.	Wilson	NC	27893
109	014	0004	Farmer	James	1305 Marlowe St	Wilson	NĈ	27893
109	014	0005	Farmer	Jessie / Jessie	5114 Ward Blvd.	Wilson	, NC	27893
109	014	0006	Eakins	Alice	5106 Ward Blvd.	Wilson	NC	27893
109	014	0007	Braswell	James	1110 E Vance St.	Wilson	NC.	27893
109	014	0008	Guess	Cora	1102 E Vance St.	Wilson	NC	27893
109	015	0001	Graham	Tony	2504 Ricks Court	Wilson	NC	27893
109	015	0002	Myers	William	1301 Fikewood Dr.	Wilson	NC	27893
109	015	0002	Hines	Azzalee	1305 Fikewood Dr.	Wilson	NC	27893
109	015	0004	Hines	Ruth	5210 Ward Blvd.	Wilson	NC	27893
109	015	,0005	Barnes	Harry	1310 Marlowe St.	Wilson	, NC	27893
109	015	0006	McNeil	Gwendolyn	1308 Marlówe St	Wilson	NC NC	27893
109	015	0007	Hines	Margaret	1306 Marlowe St	Wilson	NC	27893
109	015	0008	Woodard	Còrnelia	1304 Marlowe St.	Wilson	NĆ .	27893
109	01.5	0009	Reid	Virginia	1302 Marlowe St.	Wilson	NC	27893
109	016	0001	Daniels	Zelma	725 Morris Rd.	Winston-Salem	NC	27101
109	016	0002	Watson	Vera	910 Second Ave.	Smithfield	NC	27577
109	016	0002	Coe	lander	ř.	Wilson	NC NC	27893
109	016	0003	Mithcell		1303 Queen St. PO Box 4331	Wilson	NC NC	27893
109	016	0004	Edwards	George · Josephine	805 E. Nash St.	Wilson	NC NC	27893 27893
109	016		Edwards Miller	Josephine Marian	1306 Fikewood Dr.	Wilson	NC NC	27893 27893
109	016	0007	Barnes	DM.	5314 Ward Blvd,	Wilson	NC	27893
109	016	0008	1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Malvin	635 Barrocliff Rd	Clemmons	NČ	27012
109	016	0009	Barnes		1312 Fikewood Dr.			27893
109	016	0010	Jones Miller	Tyrone Marian	1312 Fikewood Dr.	Wilson Wilson	NC NC	27893
109	016	0011	Grode	so/contain_ordinam;	PO Box 2082	Wilson	NC NC	27893
109	017	0001	Taylor	Heirs	1321 Main St.	Farmville	NC	27828
109	017	0002	Powell	Beatrice	PO Box 1111	Wilson	NC	27893
109	017	0002	Dawson	Angela	1601 Queens St. Ext.	Wilson	NC	27893
109	017	0003	Dawson	Angela	1601 Queens St. Ext.	Wilson	NC	27893
109	017	0005	Neal	Dorothý	910 Washington St,	Wilson	NC	27893
109	017	0006	Edwards	Heirs	1600 Fikewood St. E.	Wilson	NC NC	27893
109	017	0007	Edwards	Heirs	1600 Fikewood St. E.	Wilson	NC .	27893
109	017	0008	Gill	John	1207 Mercer St.	Wilson	NC NC	27893
109	017	0009	Edwards	Heirs	1600 Fikewood St. E.	Wilson	NC NC	27893
109	1017	0010	Hunter	Robert	127 Emerson Ave.	Plainsfield	NJ	07062
109	017	0010	Empire Investment Cor		404 Broad St.	Wilson	NC	27893
109	017	0011	Empire investment Coi Blake	mpany, Inc. Hadley		Wilson	NC NC	27893
109	017	0012 .	4		617 Raleigh Rd. 2231 Imperial Ave.	Wilson	NC NC	27893
109	017	0013	Lane	Dorothy Beatrice	1 *		DC	2/893
109	018	0001	Farmer		1266 Morse St NE, Apt 103 462 East 134th St	Washington Broax	NY	20002
109	018	0003	Arrington Atkinson	Ragein	PO Box 214	Elm City	NC	27822
109	**************************************	0004		James Luther	b c a a a a a a a a a a a a a a a a a a	Wilson	NC %	27893
. 109	, , , UIS; ,	1004	Newsome	Lumer	1614 Queens St. Ext.	waison,	· NC A	.4/893

Table 2-1	Droperties	located within	1500 feet o	f Discount Cleaners.	Wilcon	North Carolina
Table 2-1.	Properties	located within	LOUU teet o.	i Discount Cleaners.	wilson.	North Carolina.

	Tax Lot ID		Property Ow	ner Name	Property Owner Address			
Мар	Block	Parcel	Lást	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
109	018	0005	Joyner .	Albert .	13 Franklin Dr.	Charelston	"SC	29407
109	018	0006	and the second s	Grandberry	3107 Good Hope Ave, Apt 504	Hillcrest Height	MD	20748
109	018	0007	Arrington	Myrlin	188 32 119th Rd.	St. Albans	NY	11412
109	018	0008	Arrington	Myrlin	188 32 119th Rd.	St. Albans	NY	11412
109	018	0009	Arrington	Myrlin	188 32 119th Rd.	St. Albans	NY	11412
109	018	0010	Howell	Sandra	700 W Gold St.	Wilson	NC	27893
109	018	0011	Arrington	Myrlin	188 32 119th Rd.	St. Albans	NY	11412 10454
109	018	0012 0001	Arrington	Ben O'Mar	462 East 134th St	Bronx	NY PA	19143
109	019 019	0001	Holloway	Pannie	5842 Angora Terrace	Philadelphia Wilson	NC NC	27893
109	019	0002	McIntosh McIntosh	Henrietta Hénrietta	1605 Carolina St. Ext.	Wilson	NC NC	* * *
109	019	0004	Diggs	Heirs	205 N. Vick St.	Wilson	NC NC	27893 27893
109	019	0005	Jones	Luther	203 N. Yick St. 2204 Imperial Ave.	Wilson	NC NC	27893
109	- 019	0005	Roberson	Carol	1826 Fieldcrest Rd.	Wilson	NC NC	27893
109	019	0007	Dawson	Dennis	109 Lord Berkeley Rd.	Raleigh	NC	27610
109	019	0008	Goff	Kinchen	4652 Lake Wilson Rd.	Elm City	NC	27822
109	019	0012	Hoskins	Clarence	402 Tocoma St.	Wilson	NC	27893
109	019	0015	Johnson	Virginia	PO Box 4011	anne diet der dringerie ingeneralgeliteren aben gerie	and the second second	27893
109	019	0016	Croffett	John	PO:Box 779	New Haven	CT	06503
. 109	. 019	0017	Croffett	John	PO Box 779	New Haven	CT .	06503
109	. 019	0018	Croffett	John	PO Box 779	New Haven	CT	06503
109:	019	0019	Newsome .	Josephine	1614 Queen St. Ext.	Wilson	NC	27893
109	019	0020	Wade	Minnie	2821 6A Dewey Ave.	Bronx	NY	10465
109	019	0021	Barnes	Willie Jr.	1903 Fieldcrest Rd.	Wilson	NC	27893
109	019	0022	Pender ~	Harriett	1608 Queen St. Ext.	Wilson	NC	27893
109	019	0023	City of Wilson		PO Box 10	Wilson	NC	27893
109	019	0024	Holloway	Fayette	3400 N 17th St.	Philadelphia	PA	
109	019	0025	Rountrée	Moses Jr.	504 Spaulding St.	Wilson	NC	27893
109	019	0026;	Rountree	Moses Jr.	504 Spaulding St.	Wilson	NC:	27893
. 109	020	0001	Williams	F&D	1101 Atlantic St.	Wilson	NC	27893
109	020	0002	Ellis	Francine	1507 Carolina St.	Wilson	NC'	27893
109		0003	White	Ròbert	PO-Box 1795	Wilson	NC	27893
109	020	0004	Williams	F&D	1101 Atlantic St.	Wilson	NC	27893
109	020	0005	Williams	F&D	1101 Atlantic St.	Wilson	NC	27893
109 109	020 021	0006 0001	Williams	F&D	1101 Atlantic St.	Wilson	NC NC	27893 27893
109	021	0001	Underwood Little	Leary Lessie	1314 Queen St. 1310 Queen St.	Wilson Wilson	NC NC	27893 27893
109	021	0003	Pepper	Mary	1310 Queen St.	Wilson	NC NC	27893
109	021	0005	Pepper	Mary	1308 Queen St.	Wilson	NC NC	27893
109	021	0006	McIntosh	Timothy	1901 Altamont Pl.	Forestville	MD	20747
109	021	0007	Barnes	Ethyl Services	1300 Queen St	Wilson	NC NC	27893
109	021	0009	Bârnes	Ethyl	1300 Queen St	Wilson	NC NC	27893
109	021	0010	Hagans	Addie	1222 Oueen St.	Wilson	NC	27893
109	021	0011	Barnes	Leroy	2425 Bel Air Ave.	Wilson	NC	27893
109	021	0012	Hall	Louis Sr.	1214 Queens St.	Wilson	NC	27893
109	021	0013	Hall	Louis Sr.	1214 Queens St.	Wilson	NC	27893
109	021	0014	Creech	Rodney	1814 Fieldcrest Rd.	Wilson	NC	27893

Table 2-1.	Properties located	within 1500 f	eet of Discount Cleaners.	 Wilson, North Carolina.

	Tax Lot ID		Property Owne	er Name	Property Owner Address			
Map	Block	Parcel	Last	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
109	021	0027	Myles	Frederick	317 Park Ave.	Wilson	NC	27893
109	021	0028	Cotton · · · · · · · · · · · · · · · · · · ·	Ella,	1303 Carolina St.	Wilson	, NC	27893
, , 109	021	0029	Zimmerman	Valerie	PO Box 2108	Fremont	NC Y	27830
109	021	0030	Parker	Ernest	1307 Carolina St.	Wilson	NC '	27893
109	<u> 021</u>	0031	Mincey Mincey	Hattie	1309 carolina St.	Wilson	<u> </u>	27893
109	021	0032	Edwards	- Gregory	516 Deans St.	Wilson	NC	27893
109	021	0033	Dixon	Willie Jr.	2817 Tilghman	Wilson	NC	27893
109	021	0034	Koster	Joe	PO Box 754	Wilson	NC	27893
109	021	0035	Brown	Claude	1117 Carolin St.	Wilson	NC	27893
109	021 021	0036	Robbins	Gary	905 Timberake Dr.	Wilson	NC NO	27893
109	021 021	0038	Dulbin McPhail	Marise	1321 Carolina St.	Wilson	, NC KY	27893 40245
109	021	0039	Cooke	Braxton Heirs	14207 Markleitam Way 1913 T. St. SE	Louisville	DC	20002
109	021	0039	Manning	James	1913 1. St. St.	Washington Wilson	NC NC	27893
109	021	0041	Hammonds	Dorothy	PO Box 4534	Wilson	NC	27893
109	026	0001	Evans	Beverly	5213 Tinkers Creek Place	Clinton	MD	20735
109	026	0001	Jones	Retha	2210 Imperial Ave.	Wilson	NC	27893
109	026	0002	Evans	Beverly	5213 Tinkers Creek Place	Clinton	MD	20735
109	026	0004	McCrimmon	Heirs	1318 Carolina St.	Wilson	NC	27893
109	026	0005	McPhail	Braxton	14207 Markleitam Way	Louisville	KY	40245
109	026	0006	Barnes	Ethyl ·	1300 Queen St	Wilson	NC	27893
109	026	0007	Smith	Darryl	2700 Nottingham Rd.	Wilson	NC.	27893
109	026	0008	Raines	Charles	PO.Box 215	Wilson	NC	27893
109	026	- 0009 `	Arrington	Hilda	1911 Lenoir Dr.	Wilson	NC .	27893
109	026	0100	Raines	. Charles	2700 Nottingham Rd.	Wilson	NC	27893
109	026	0011	Raines	Charles	2700 Nottingham Rd.	Wilson	NC	27893
109	026	0012	Hawks	Timothy	1300 Waverly Rd.	Wilson	NC	27893
109	026	0013	Barnes	Jimmy	1300 Carolina St.	Wilson	NC	27893
109	026	0014	Greene	James	6655 Town Creek Rd.	Elm City	NC	27822
109	026	0015	Benson	Frank	PO Box 1424	Wilson	NC	27893
109	026	0016	Dildy	John	1001 W Nash St.	Wilson	, NC	27893
109	026	.,,` 0017	Barnes	Ethyl	1300 Queen St	Wilson	NC NC	27893
109	026	0019	MóPhail	Braxton	14207 Markleitam Way	Louisville .	KY	A0245
109	026	0020	Barnes	Douglas	1315 Washington St.	Wilson	NC NC	27893
109		0022	Fuch	Jóho	1317 Washington St.	Wilson	NC	27893
109	026 .	0023	Benson	Frances	1616 W Nash St.	Wilson	NC	27893
109 109	026 027	0024 0001	Wells	Kermit	1402 Raleigh Rd.	Wilson	NC	27893
109	027 027	0001	Gilliam	Annie	5500 Ward Blvd.	Wilson	NC	27893
109	027	0002	Morris Johnson	 Margaret Thelma 	4100 Old Raleigh Rd. 1402 Carolina St.	Wilson Wilson	NC NC	27893 27893
109	027	0003	Collins		1402 Carolina St.	Wilson	NC NC	27893
109	027	0005	Delaney	Ruby Mary	PO Box 4052	Wilson	NC NC	27893
109	027	> 0006 ↔	Bobbitt	Alton	1403 Washington St.	Wilson	NC.	27893
109	027	0007	Dunston	Hildra	8547-A Bunn Rd.	Simms	NC NC	27893
109	027	0008	Thompson	Alton	601 E. Vance St.	Wilson	NC	27893
109		0009	Jones	Retha	2210 Imperial Ave.	Wilson	NC	27893
109	027	0010	Moye	Annie	5506 Ward Blvd.	Wilson	NC	27893
			1. 1740,70	, /1111110	1 3300 1144 2114.)	1111011		21023

Table 2-1. Properties located within 1500 feet of Discount Cleaners. Wilson, North Carolina.

	Tax Lot II)	Pro	perty Owner Name	Property	y Owner Address	;	
Map	Block	Parcel	Last	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
109	028	0001	Haney	Bettie	PO Box 4231	Wilson	NC	27893
109	028	0002	Barnes	Elizabeth	5501 Ward Blvd	Wilson	NC	27893
109	028	0003	Barnes	Elizabeth	5501 Ward Blvd	Wilson	NC	27893
109	. 028	0004	Barnes	Outen	PO Box 1781	Wilson	NC	27893
109	028	0005	Reid	Samuel	1503 Washington St.	Wilson.	NC :	27893
109	028	0006	Reid	Samuel	1503 Washington St.	Wilson	NC "	27.893
109	028	0007	Benson	John .	PO Box 1424	Wilson	"NO."	27893
109	028		Ellis	Billie	1504 Carolina St.	Wilson	NC	27893
109	028	0009	Barnes	Michael	PO Box 711	Wilson	NC	27893
109	028	0010	Barnes	Michael	PO Box 711	Wilson	NC	27893
109	029	0001	Dildy	John Jr.	1001 W Nash St.	Wilson	NC	27893
109	029	0002	Taylor	William	1614 Carolina St.	Wilson	NC	27893
109	029	0003	City Of Wilson		PO Box 10	Wilson	NC	27893
109	029	0004	Haney	Shirley	1610 Carolina St.	Wilson	NC NC	27893
109	029:	0005	Hall	Donald .	1608 Carolina St.	Wilson	NC .	27893
109	029	0007	Freeman	Charles Jr.	8710 Exum Rd	Kenly	NC.	27542
109	029	0008	Freeman	Charles Jr.	8710 Exum Rd	Kenly	NC.	27542
109	029	0009	Lewis	Robert	PO Box 656	Bailey	NC	27807
109	029	0010	Ellis	Billie	9810 Highway 39	Middlesex	NC	27557
109	030	0001	Davis	Avis	170-10 130th Ave Apt 3B	Jamaica	NY	11400
109	030	0002	Rountree	Doris	914 W Gold St.	Wilson	NC	27893
109	031	0001	Dickens	Annie	5600 Ward Blvd.	Wilson	NC	27893
109	031	0002	Green	Effie	1404 Washington St.	Wilson	NC	27893
109	031	0003	Green	Effic	1404 Washington St.	Wilson	NC NC	27893
109	1031 K	. , ,0004	Dean Properties LL	.c ,	PO Box 3755	Wilson	O NC	27893
109	031	0005	Hooker	Alice	708 E Green St.	Wilson	NC'	27893
109	031	0006	Coley	Joyous	1409 Atlantic St.	Wilson	NC .	27893
109	031	0007	Holloway	Pauline	5614 Ward Blvd.	Wilson	NC -	27893
109	031	0008	Holdford	William	PO Box 729	Wilson	NC	27893
109	032	0001	Lewis	James	1607 E Nash St.	Wilson	NC	27893
109	032	0002	Powell	Charles	PO Box 874	Wilson	NC	27893
109	032	0003	Wilson Area Habitat for Hun	nanity, Inc.	 PO Box 1973 	Wilson	NC	27893
109	032	0004	Ruffin	Penny	3785 Evans Trail way	Beltsville	MD	20705
109	032	0005	Newsome	Mittle	1312 Washington St	. Wilson ,	NC.	27893
109	032	0006	Jóyner	Emestine	1310 Washington St.	Wilson	NC:	27893
109	032	0007	McCall.	Henry	3200 Alabama Ave SE.	Washington ,	.`⊹ , d (0 ≤ `	20010
109	032	. <	Cromartie	Robert.	5413 Lakeside Dr.	Wilson	NC.	27893
109	032	0019	Dale	Donald	1106 Lakeside Dr.	Wilson	NC NC	27893
109	032	0020	Smith	Robert	5413 Lakehaven Ct.	Wilson	NC	27893
109	032	0021	Reginald	Phillips	1321 E Atlantic Ave.	Wilson	NC	27893
109	032	0022	Ford	Sarah	1321 Atlantic St.	Wilson	NC	27893
109	032	0023	Brewer	Selby	4501 Hatcher Lane	Wilson	NC	27893
110	001	0002	Lee	Marguerite	1800 Westbrook Dr.	Wilson	NC	27893
110	001	0003	Lee	John	2414 Runnymeade Rd	Wilson	NC.	27893
110	001	0004	i.ee	Marguerite	1800 Westbrook Dr.	Wilson	NC.	27893
110	007	Ó001	Hicks	George Control	1400 Lipscomb Rd.	Wilson	· · · · NC	27893
110	007	0002	McDonald's	BHT Inc.	PO Box 1168	Zebulon ***	, NC	27597

Toble 2.1	Properties located	within 1500	fact of Discount	Clanner	Wilcon	North Carolina
Table 2-1.	Properties located	within 150	Jieel of Discoun	Cleaners.	WISOIL	Norm Caronna.

	Tax Lot II)	Property Owne	r Name	Proper	ty Owner Address		
Map	Block	Parcel	Last	First	Street	City	State	Zip
108	001	0001	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
108	001	0002	Filmore	Alberta	106 Tacoma St.	Wilson	NC	27893
110	008		Farmer	Barnes	905 N Ward Blvd,	Wilson	NC	27893
110	008	0002	White	William	4910 Ward Blvd.	Wilson	NC	27893
110	800	0011	Reid	Mary	1015 Faison St.	Wilson	NC	27893
117	001	0001	Hoskins	Gladys	731 Jefferson St. NW	Washington	DC	20011
117	001	0002	Sharpe	Connie	3220 Boyette Dr.	Wilson	NC	27893
117	001	0004	Tedder	Ernest	1317 Dogwood Lane	Wilson	NC	27893
117	001	0005	Tédder	Ernest	1317 Dogwood Lane	Wilson	NC	27893
117	* ************************************	0006	Hoskins	Gladys	731 Jefferson St. NW	Washington	DC `	. 20011
117	100		Charles H. Darden High School A		PO Box 2031	Wilson	NC	27893
117/	001	0008	Watson	James	912 Timberlake Dr.	Wilson	NC	27893
117		0009	Wilson Apartments Limited Partnership	mainta sama (azimakakakakakakakakakakakakakakakakakakak	3201 Glenwood Ave., Suite 202	Raleigh	NC	27615
117 117	002 002	0001 0002	Boykin	J.R. III Martin	PO Box 7440 2301 Tranquil Dr.	Wilson Wilson	NC NC	27893 27893
117	002	0002	Witherspoon Barnes	Marun Mildred	1702 Queen St.	Wilson	NC NC	27893 27893
117	002	0003	Hoskins	Clarence	402 Tacoma St.	Wilson	NC	27893
117	002	- 0005	Massey	Mary	308 Tacoma St.	Wilson	NC	27893
117	002	0006	Dickerson	Marcus Jr.	1703 Carolina St.	Wilson	NC	27893
118	001	0001	Milîs	Clark Sr.	Rt 2.Box 103	Spring Hope	NC 3	27882
118	001	0002	Boykin	J.R. III	PO Box 7440	Wilson	NC	27893
. 118	001	0003	Witherspoon	Martin	2301 Tranquil Dr.	Wilson	NC *	27893
118	002	0001	Daniel	J.H.Jr.	1711 Washington St.	Wilson	NC.	27893
118	002	001A	Plater	Peggy	PO Box 243	Wilson	NC	27893
118	002	0002	Pender	James	110 Plumtree Lane	Castle Hayne	NC	28429
118	002	0003	Jones	John	405 N. Reid St.	Wilson	NC	27893
118	002	0004	Pender	James	110 Plumtree Lane	Castle Hayne	NC	28429
118	002	0005	Fulford Properties		PO Box 7138	Wilson	NC	27893
118	002	0006	Massey	Robert	308 Tacoma St.	Wilson	NC	27893
118		0001	Pender	James	110 Plumtree Lane	Castle Hayne	NC	28429
118	003	0002	Pender	James	110 Plumtree Lane	Castle Hayne	NC.	28429
.118	☼ № № 003 /	0003	Williams	Leé	3209 Airport Blvd.	Wilson.	NC .	27893
118		0001	describes medical and the territories and the second second	Lunio Lange II. L. Curtis Lange III. Lange	411 Applewhite Ave.	Stantonsburg	NĆ	27883
118	004	0002	Fort	J.L. Jr.	309 Arbo Lane	Cary	NC	27511
118	005	0001	Saint James Christian Church	-	PO Box 4085	Wilson	NC	27893
118	005	0002	Woodard	Herbert	1735 E Nash St.	Wilson	NC	27893
118	005	0003	Woodard	Herbert	1735 E Nash St.	Wilson	NC	27893
118	005	0004	Saint James Christian Church	or an instantion and a second of the second	PO Box 4085	Wilson	NC	27893 27893
297	005	0005 0001	Thomas	Heirs	1747 E Nash St. 1747 E Nash St.	Wilson Wilson	NC NC	27893 27893
315	002	0014	Cox	Laura L.W.	1747 E Nash St.	Wilson	NC	27893
315	002	0015	Hudson	Susan	1747 E Nash St.	Wilson	NC .	27893
315	002	0015	Watson	John	1747 E Nash St.	Wilson	NC NC	27893
315	002	0017	Beaman	Randal	312 Cambridge Dr.	Tarboro	NC	27886
	002	0017	Demiai	Ranuai	Jiz Camonage Di.	1410010	110	21000

Table 3-1. Water Level Data Discount Cleaners, Wilson, North Carolina.

Well	Measuring Point	9/9/99		10/	25/99	12/6/99	
Identification	Elevation ¹	DTW	EGW	DTW	EGW	DTW	EGW
MW-1	100.20	9.37	90.83	5.91	94.29	6.83	93.37
MW-2	98.29	8.98	89.31	0.9	97.39	2.6	95.69
MW-3	99.21	7.89	91.32	0.91	98.30	3.52	95.69
MW-4	98.90	8.83	90.07	0.12	98.78	0.35	98.55
MW-5	99.89	9.02	90.87	3.6	96.29	3.57	96.32
MW-6	100.08	7.61	92.47	2.7	97.38	2.54	97.54

1 Elevations based on an arbitrary benchmark.
DTW Depth to Water in Feet from measuring point.

EGW Elevation of Groundwater based on arbitrary benchmark.

Table 4-1. Summary of Groundwater Analytical Data, Discount Cleaners, Wilson, North Carolina.

Constituents	Sample I.D.: Lab·I.D.: Date sampled:	MW-1 92623719 9/9/99	MW-2 92623727 9/9/99	MW-3 92623776 9/9/99	MW-4 92623768 9/9/99	MW-5 92623735 9/9/99	MW-6 92623743 9/9/99
Volatile Organic Constituents (USEPA Method 6230D) ug/L	NCAC 2L Standard						
Bromodichloromethane	0.6*	1.2	2,3	<0.5	1.6	< 0.5	<0.5
Chloroform	0.19	5.0	11	2.3	7.9	3.5	11
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	3.0	< 0.5	<0.5	380
trans-1,2-Dichloroethene	70	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	2.2
Isopropyl ether	70*	< 0.5	< 0.5	< 0.5	1.1	< 0.5	< 0.5
Methylene chloride	5	9.2U	< 0.5	2.0U	9.6U	6.9UJ	1.9U
Napthalene	21	<2	3.6	<2	<2	<2	<2
Tetrachloroethene	0.7	< 0.5	< 0.5	1.4	< 0.5	< 0.5	1,800
1,1,1,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	6.7
Trichloroethene	2.8	<0.5	< 0.5	<0.5	<0.5	<0.5	96

ug/L	Micrograms per liter.
<	Constituent was not detected above the reporting limit.
	Constituent concentration exceeds the NCAC 2L Standard.
NS	No 15A NCAC 2L Standard has been established for this compound.
*	Interim NCAC 15A NCAC 2L Standard.
U	Data qualified as non-detect due to presence of Methylene chloride in trip blank.
.J	Duplicate sample data from MW-5 for Methylene chloride not within acceptable limits.

Table 4-2. Summary of Groundwater Sampling Field Parameters, Discount Cleaners. Wilson, North Carolina.

Constituents	Units	Sample I.D.: Date sampled:	MW-1 9/9/99	MW-2 9/9/99	MW-3 9/9/99	MW-4 9/9/99	MW-5 9/9/99	MW-6 9/9/99
pН	SU		5.8	5.35	5.96	5.64	5.56	4.88
Conductivity	. μs/cm		108	297	321	270	161	141
Temperature	°C		22.6	28	27.3	28.9	25.6	27.9

SU Standard units.

μs/cm Microsemens per centimeter.

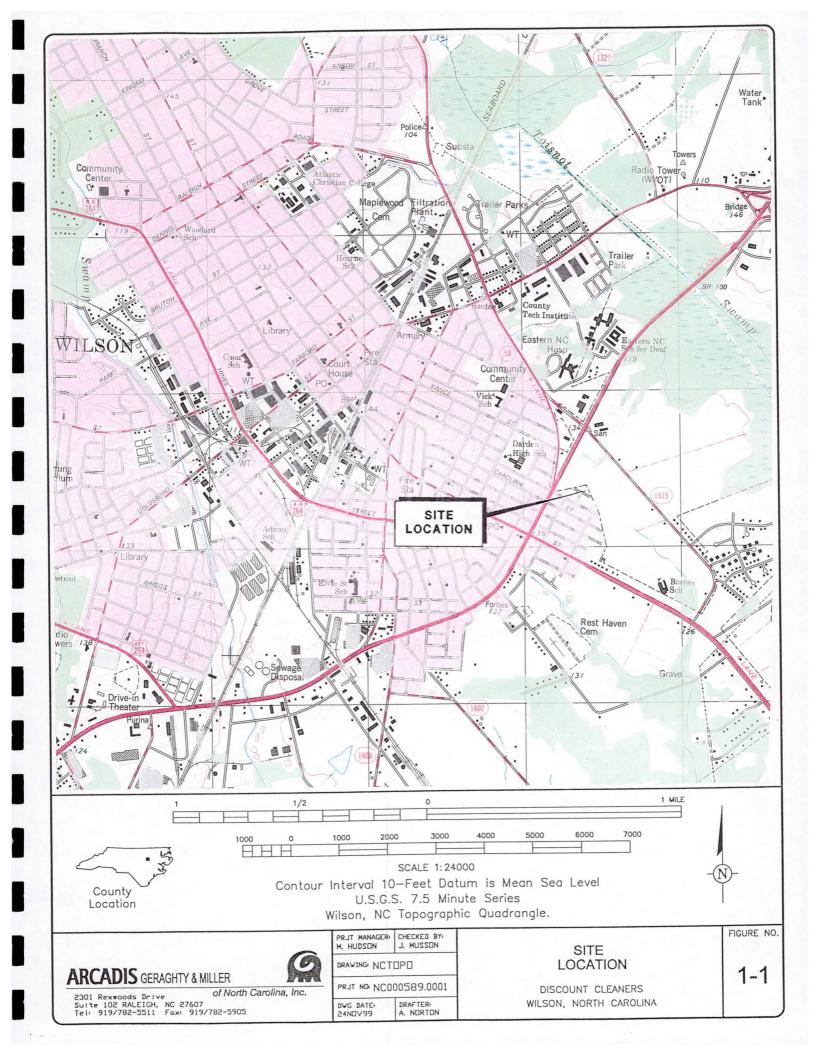
°C Degrees Celsius.

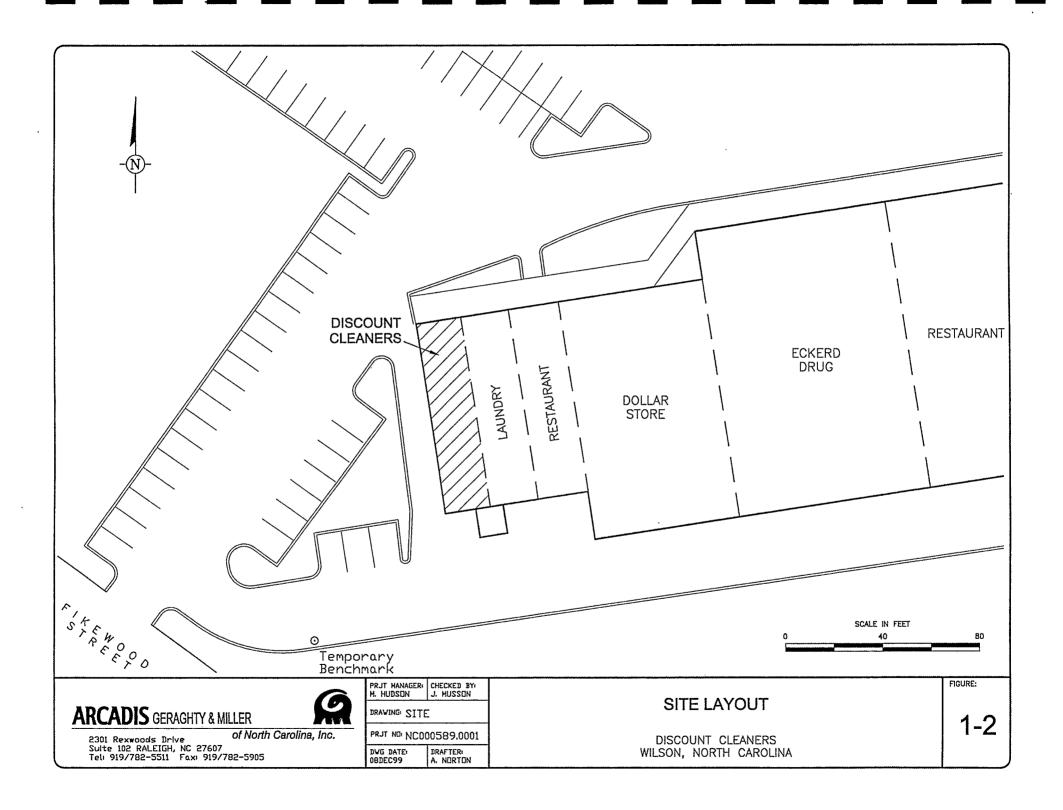


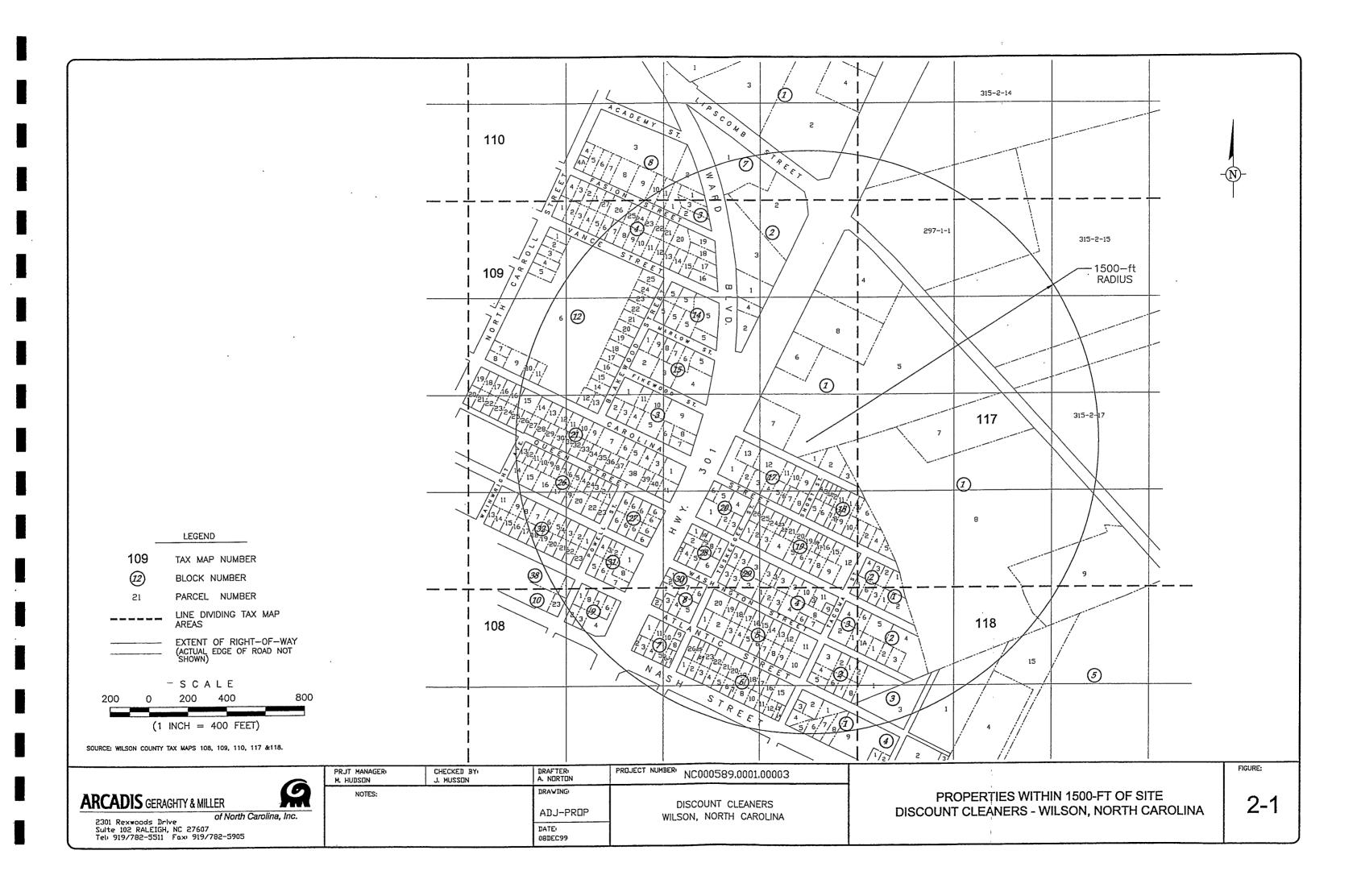
ARCADIS GERAGHTY&MILLER

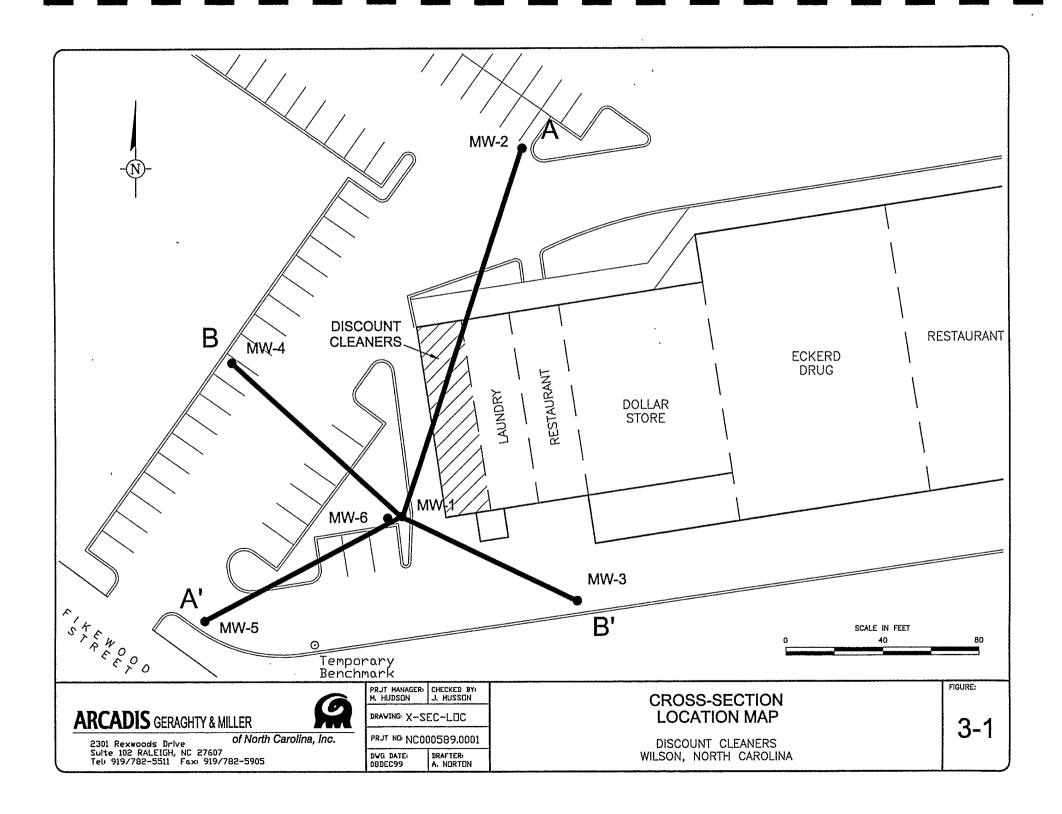
COMPREHENSIVE SITE ASSESSMENT REPORT

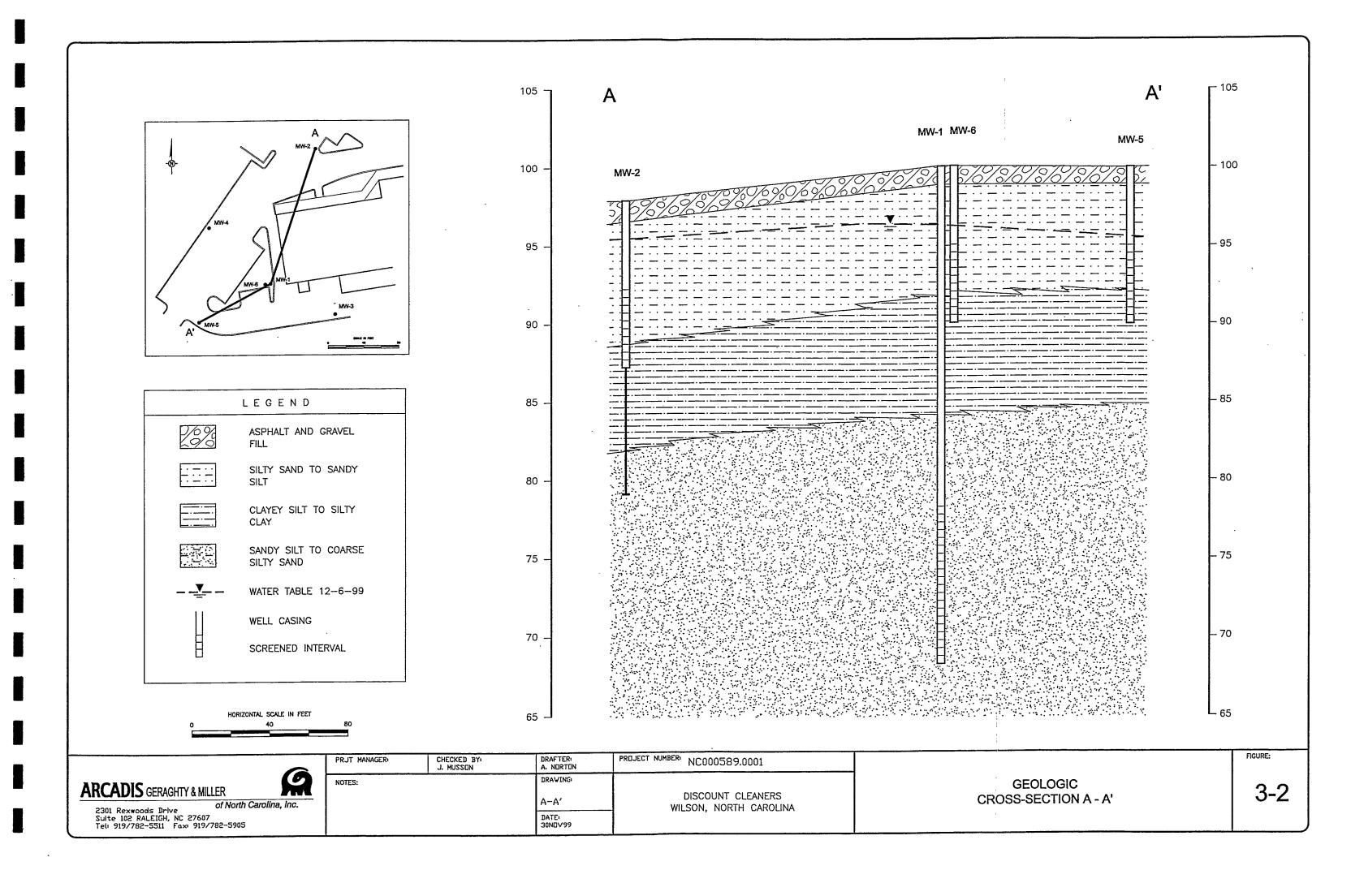
FIGURES

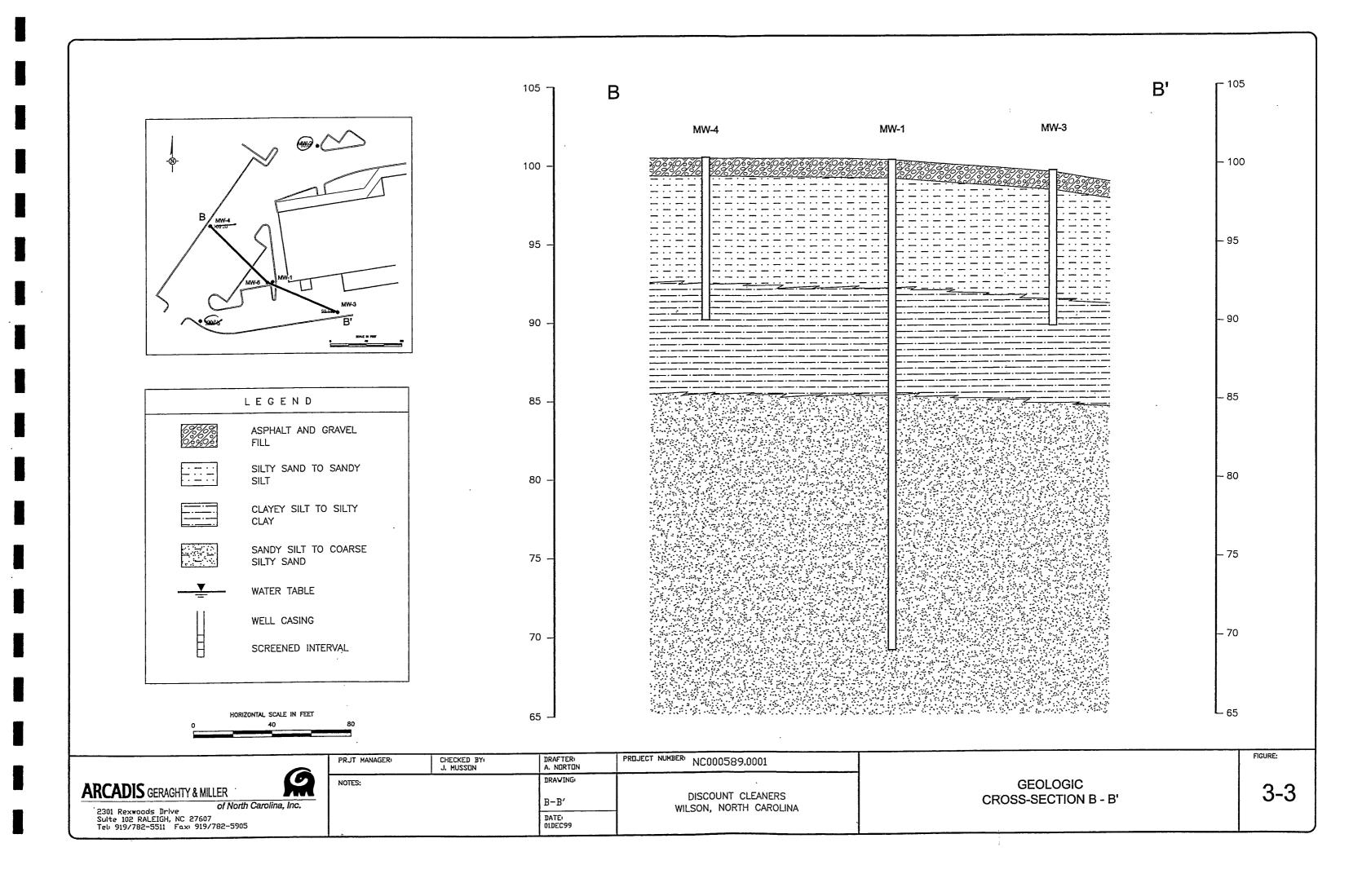


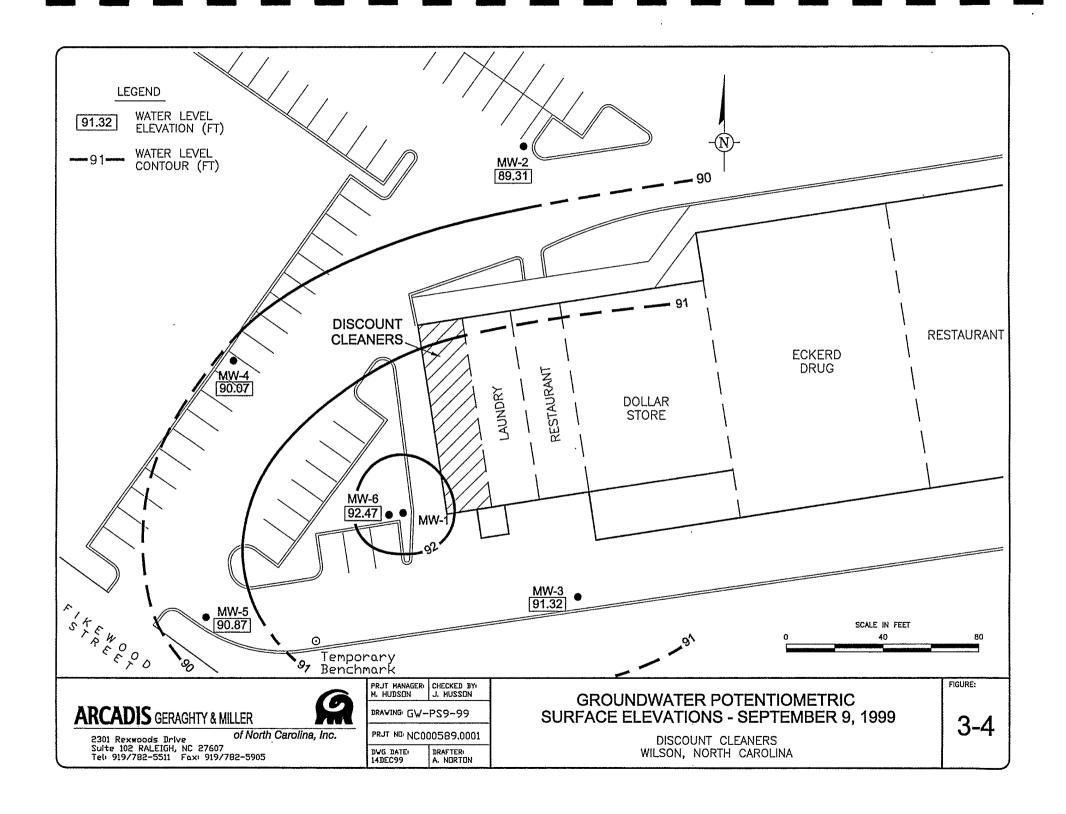


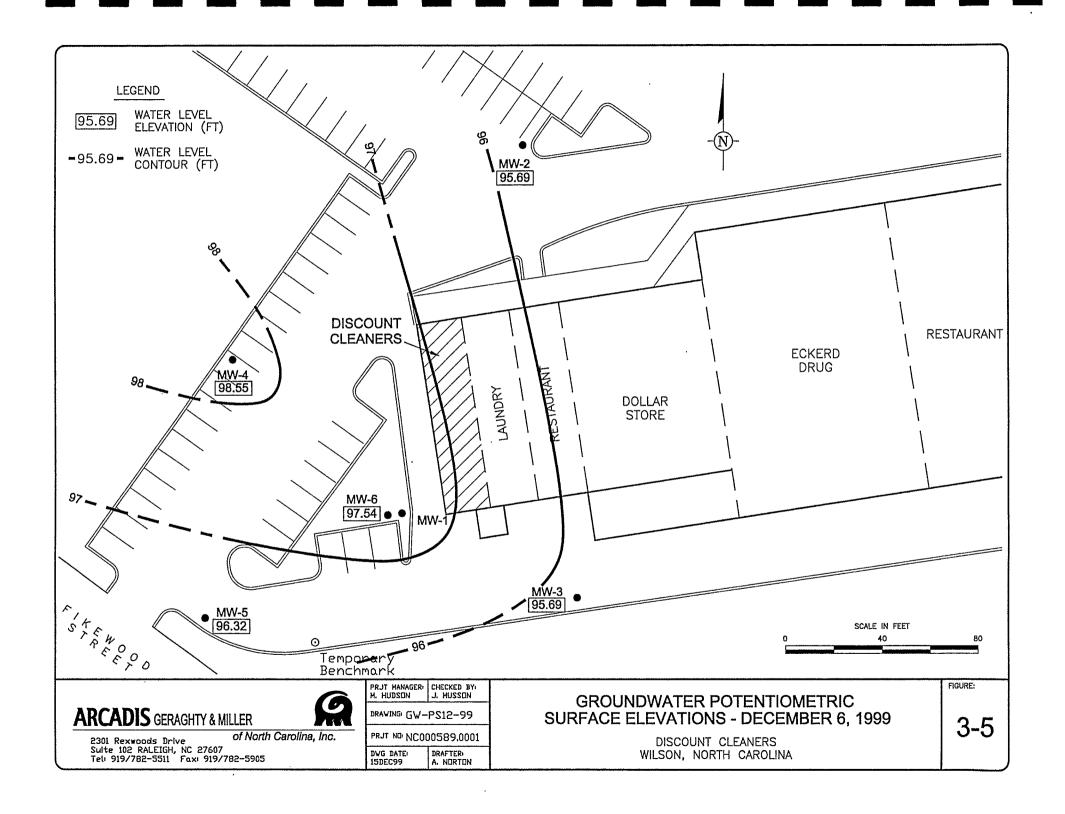


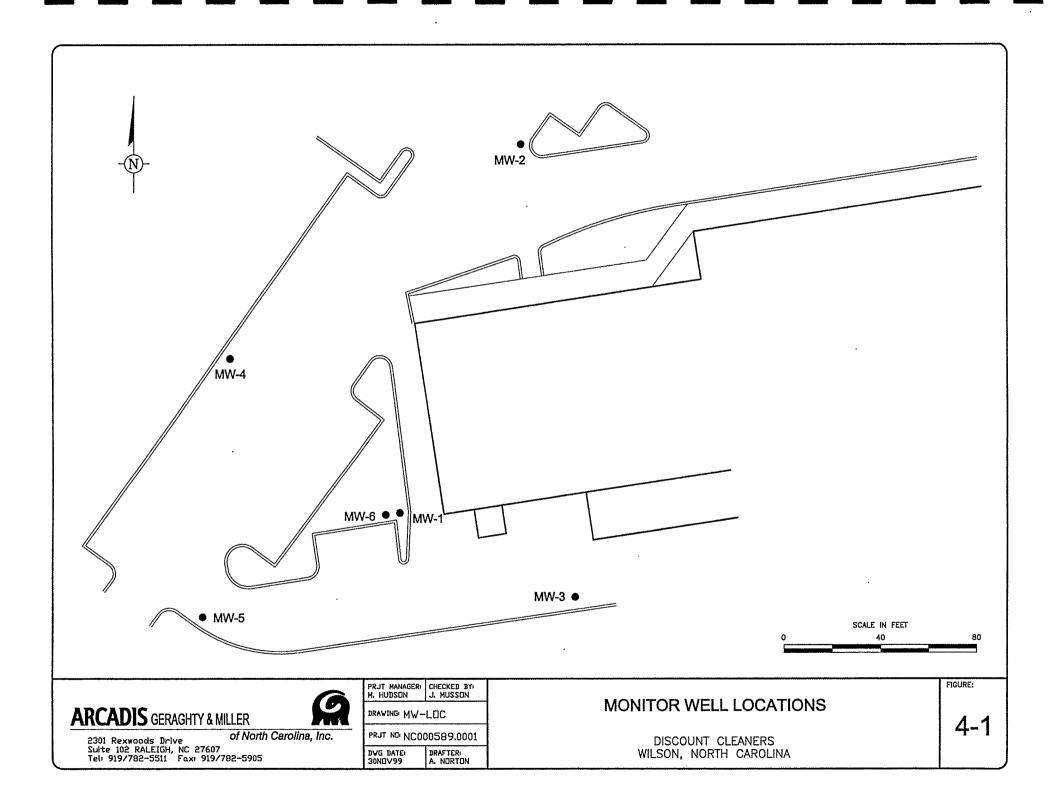












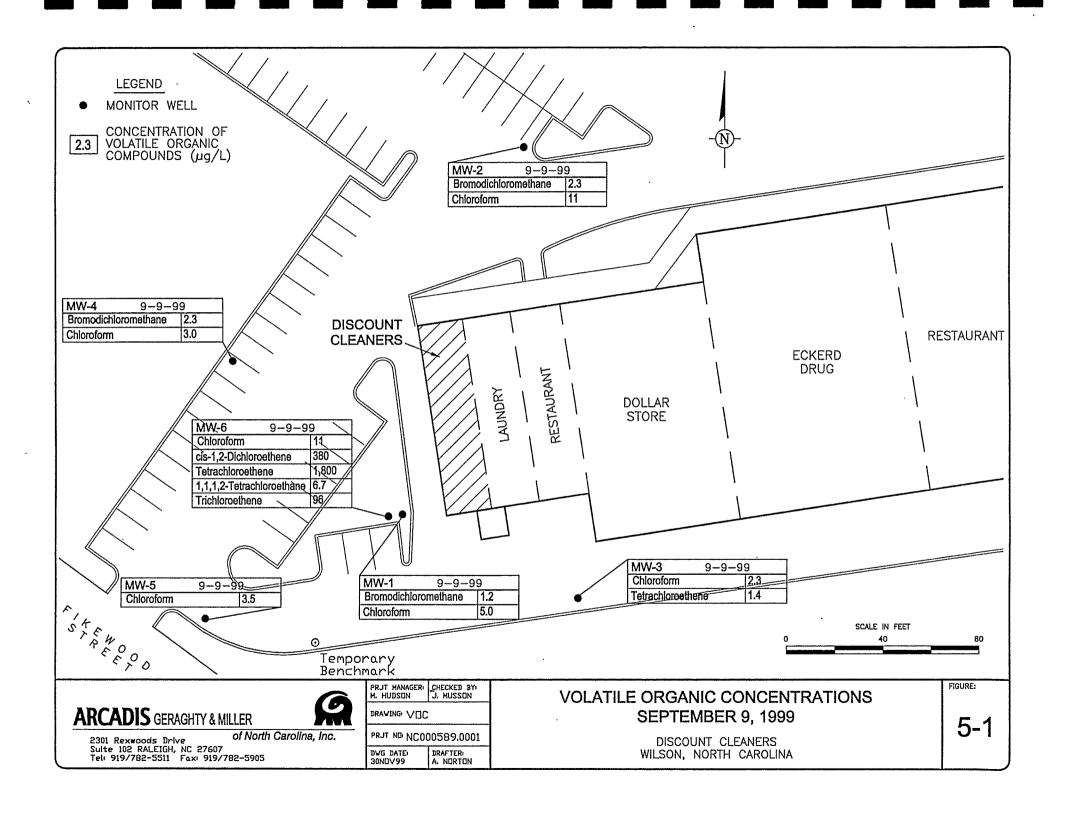
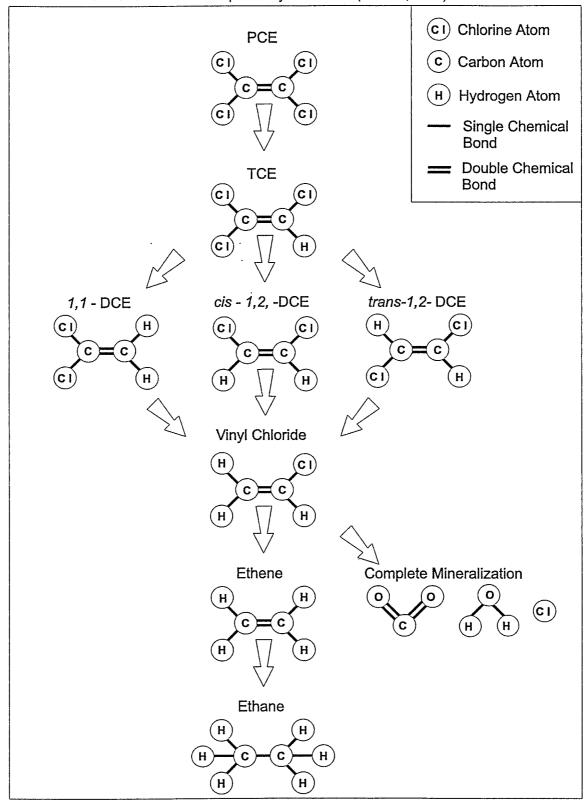


Figure 5-2. Transformations of Chlorinated Aliphatic Hydrocarbons (USEPA, 1998).



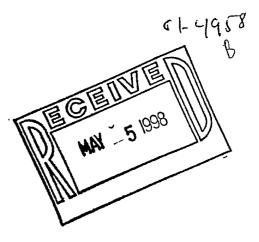


ARCADIS GERAGHTY&MILLER

COMPREHENSIVE SITE ASSESSMENT REPORT

APPENDIX A

LAW Limited Environmental Site Assessment Report, May 4, 1998





LIMITED ENVIRONMENTAL SITE ASSESSMENT REPORT

WILLIAMSON CLEANERS FIKEWOOD PLAZA WILSON, NORTH CAROLINA

Prepared For:

Williamson Cleaners 1400 Ward Boulevard Wilson, North Carolina 27893

Prepared By:

Law Engineering and Environmental Services, Inc. 3301 Atlantic Avenue
Raleigh, North Carolina 27604

May 4, 1998

LAW Job No. 30741-8-2867



May 4, 1998

Williamson Cleaners 1400 Ward Boulevard Wilson, North Carolina 27893

Attention: Mr. Joel Williamson.

Subject: LIMITED ENVIRONMENTAL ASSESSMENT REPORT

WILLIAMSON CLEANERS

FIKEWOOD PLAZA

WILSON, NORTH CAROLINA

LAW ENGINEERING JOB NO. 30741-8-2867

Dear Mr. Williamson:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to present the results of our environmental services recently performed at the subject site. The purpose of our services was to determine the absence or presence of perchloroethylene ("Perc") within subsurface soils and/or groundwater at the site. The investigation was conducted in general accordance with the scope of work provided in LAW proposal No. 30741-8-5464, dated April 17, 1998.

BACKGROUND

The subject site is a dry-cleaning facility is located within the Fikewood Plaza shopping center (Drawing 1) and has been in operation since 1985. The dry-cleaning machine is a closed-loop system that utilizes Perc and has always been operated at its current location within the building. No additional dry-cleaning machines have been located within this building space and no other dry-cleaning facilities have been located within the shopping center since its construction.

Mr. Joel and Judy Williamson reportedly purchased the facility four years ago. At the time of the purchase Mr. Williamson made several upgrades to the dry cleaning machine to improve its efficiency and to address his concerns regarding the operation of the facility and its effect on the environment. The dry cleaning machine was recently deactivated and the facility is currently being used as a pickup station. Based upon our recent site observations, the deteriorated condition of the paint on the dry-cleaning machine and the presence of staining on the machine and surrounding concrete floor suggested that Perc may have been released at the facility.

SCOPE OF WORK

The objective of our services was to determine the absence or presence of Perc within subsurface soils and/or groundwater at the site. To meet this objective, we conducted a limited environmental assessment that included the advancement of four soil borings to collect soil and groundwater samples for laboratory analysis. Field activities were conducted on April 23, 1998.

Two of the soil borings were advanced within the building through the concrete floor adjacent to the drycleaning machine. The two remaining soil borings were advanced through the asphalt outside of the building at the location of the boiler condensate discharge pipe, and where the dumpster was formerly located during the previous ownership of the facility. An electric coring machine was used to cut four-inch diameter holes through the concrete and asphalt. The approximate locations of the soil borings are shown on Drawing 2.

Soil samples were collected from each of the borings during our assessment activities at regular depth intervals. A licensed geologist conducted the field activities and manually inspected and screened the soil samples in the field for indications of contamination. A Foxboro organic vapor analyzer (OVA) calibrated to 100 parts per million (ppm) methane was used to screen soil samples using the headspace method. The unsaturated soil sample from each boring that exhibited the greatest indication of contamination was submitted for laboratory analysis.

The water-table was encountered at a depth of approximately two feet below land surface (bls) within each of the four soil borings. LAW collected groundwater samples by installing a temporary monitoring well into each of the four borings. Each well was constructed of two-inch diameter schedule 40 polyvinyl chloride (PVC) equipped with a 2.0 foot long section of 0.010-inch slotted screen. The temporary wells were installed within the borings to depths ranging from 4.0 to 6.0 feet bls. Approximately one gallon of groundwater was bailed from each of the four wells prior to sample collection. Groundwater was then decanted directly from the bailer into prelabled sample jars.

The four soil samples and groundwater samples were placed into a cooler with ice and were maintained in the custody of the LAW field representative until delivery to Federal Express for shipment to LAW's analytical laboratory in Pensacola, Florida. The soil samples were analyzed for halogenated volatile organic compounds using EPA test Method 8010. The groundwater samples were also analyzed for halogenated volatile organic compounds using EPA test Method 601.

The PVC wellpoint was removed from each of the four soil borings upon completion of groundwater sampling activities. Each boring was then backfilled with a cement bentonite grout slurry.



RESULTS OF THE INVESTIGATION

The results of our laboratory analysis indicate that dry cleaning solvent was detected in unsaturated subsurface soils at all of the boring locations with the exception of Boring B-1 which was located adjacent to the dumpster. Tetrachloroethene (Perc), trans 1,2,dichloroethene (DCE), cis-1,2-dichloroethene (also referred to as DCE) and trichloroethene (TCE) were detected at elevated concentrations within subsurface soils. DCE and TCE are known daughter products from the natural degradation of Perc within the subsurface. North Carolina has not established maximum concentration standards for these constituents in soil at this time. Bromomethane and chloromethane were also detected in soil at the location of boring B-4. At this time it appears that these constituents are not related to the former dry cleaning process and may be artifacts of the tap water that was used in the concrete coring process. A summary of the laboratory test and headspace screening results are provided in Table 1. A copy of the laboratory report is provided in Attachment A.

Groundwater contamination was detected at each of the three locations where soil contamination was detected in unsaturated soils and was not detected at the location of Boring B-1. Perc and TCE were the only two constituents that were detected in groundwater. Both of these constituents were detected at concentrations that exceeded their respective North Carolina Groundwater Standards.

Our inspection of subsurface soils indicates that they consist of a mottled gray to brown clayey silt with small amounts of sand. A thin two to eight-inch layer of black organic silt was observed immediately below the concrete and asphalt surface. The water-table was encountered at all four boring locations at a depth of approximately 2 feet bls. A review of the Wilson, North Carolina United States Geological Survey Quadrangle map (Drawing 1) indicates that the site is located in a low-lying area near to Toisnot Swamp. This suggests that the shallow-water table encountered within the borings is representative of naturally occurring conditions.

CONCLUSIONS AND RECOMMENDATIONS

Field observations and laboratory test results suggest that Perc was released into subsurface soils and groundwater at the location of the dry cleaning machine and near the back door adjacent to the condensate drip pipe to the boiler. There was no evidence to suggest that dry cleaning solvent had been released as a result of previous use of the dumpster. The extent of soil and groundwater contamination is not known at this time as such determination was beyond the scope of this investigation.

The presence of Perc and TCE concentrations in groundwater in excess of their respective standards requires that the North Carolina Department of the Environment and Natural Resources (DENR) be notified that a release of dry-cleaning solvent has occurred at the subject property. DENR will likely require additional assessment to determine the approximate extent of both soil and groundwater contamination and to determine if the release poses a threat to human health and the environment.



Although North Carolina has not established maximum allowable concentrations for the dry-cleaning solvent constituents in subsurface soils, contaminated soils represent an ongoing source of groundwater contamination and should therefore be remediated.

A copy of this report should be submitted to DENR Division of Water Quality (DWQ) to notify this agency of the release as required in 15A NCAC 2L.0106.

CLOSURE

We appreciate the opportunity to provide environmental services for this project. If any questions arise regarding this letter report, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

Jeffrey B. T

JBT/BJB/jbt

Senior Gedios

LAW ENGINEERING & ENVIRONMENTAL SERVICES, INC.

Brian J. Bellis, L.G. Principal Hydrogeologist

Buan J. Bellis

by with permission

cc: Mr. Kevin Grewell, ECS Insurance - Claims Department



TABLE



TABLE 1

SUMMARY OF LABORATORY ANALYTICAL RESULTS SOIL AND GROUNDWATER SAMPLES WILLIAMSON CLEANERS - FIKEWOOD PLAZA WILSON, NORTH CAROLINA LAW JOB NO. 30741-8-2867

PARAMETER	SAMPLE I.D. #	В	-1	В	-2	B	-3	В	3-4	N.C.
		TV	V-1	TV	V-2	TV	V-3	Τ\	W-4	GROUNDWATER
										STANDARDS
	SAMPLE MATRIX	Soil	GW	Soil	GW	Soil	GW	Soil	GW	(ug/L)
	0.1404.00000000000000000000000000000000	(B-1)	(TW-1)	(B-2)	(TW-2)	(B-1)	(TW-3)	(B-1)	(TW-4)	
	SAMPLE DEPTH (SOIL) SCREENED INTERVAL	0.5-1.0	1.5-3.5	0610	3.5-5.5	0510	1 2040		0040	Apply To
	(GROUNDWATER)	0.3-1.0	1.3-3.3	0.5-1.0	3.3-3.3	0.5-1.0	2.0-4.0	1.0-1.5	2.0-4.0	Groundwater (GW) Samples Only
	(FT)									Samples Omy
	SAMPLE	4/01	100	4/2	2/00		0.00			
	DATE	4/23	3/98	4/2.	3/98	4/2	3/98	4/2	3/98	
EPA METHODS	8010 AND 601				•					*
Bromomethane		ND	ND	ND	ND	ND	ND	579	ND	*
Chloromethane		ND	ND	ND	ND	ND	ND	360	ND	*
Trans 1,2,Dichlor	oethene (DCE)	ND	ND	ND	ND	34.9	ND	ND	ND	70
Cis-1,2-Dichloroe	thene (DCE)	ND	ND	65.2	ND	508	ND	5650	ND	70
Tetrachloroethene	e (PCE or "Perc")	ND	ND	ND	466	20.9	1130	1810	352	0.7
Trichloroethene (TCE)	ND	ND	7.09	342	3.13	228	1170	188	2.8
HEADSPACE S	CREENING RESULTS (ppm)	6.0	na	1.1	na	1.3	na	41.0	па	na

All results are ug/L (GW) or ug/Kg (Soil) =Micrograms (ug) per liter (L) or Killogram (Kg) = parts per billion (ppb).

GW Groundwater

ND Not detected; see laboratory reports for applicable detection limits.

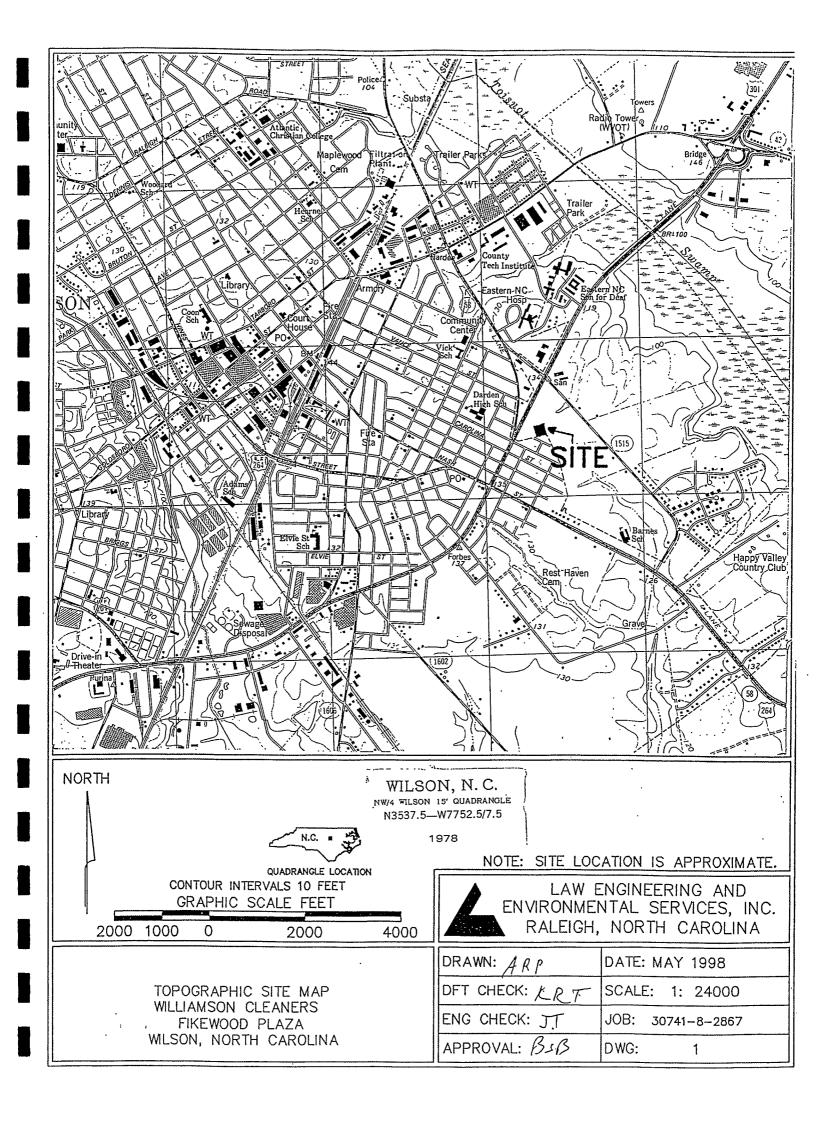
na Not analyzed for this parameter

* Groundwater Standards = Laboratory detect limit.

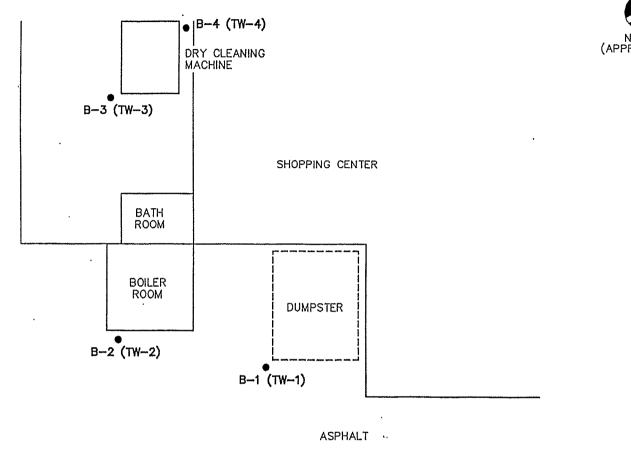
Shaded Area = Concentration detected above NC Groundwater Standards - Groundwater Samples Only

DRAWINGS









_____CURB ______GRASS

LEDGEND

• B-1 (TW-1) SOIL BORING (TEMPORARY MONTERING WELL) LOCATION

DRAWING NOT TO SCALE

82867P01.dwg

SAMPLE LOCATION MAP WILLIAMSON CLEANERS — FIKEWOOD PLAZA WILSON, NORTH CAROLINA



LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC. RALEIGH, NORTH CAROLINA

DRAWN: AP P	ENG CHECK: JT	DATE:	MAY 1998	JOB:	30741-8-2867		
DFT CHECK: KRT	APPROVAL: BIB	SCALE:	N.T.S	DWG:	2		
DEFEDENCE							

REFERENCE:

ATTACHMENT A

LABORATORY TEST REPORT

AND

CHAIN OF CUSTODY





May 1, 1998

Mr. Jeff Tyburski LAW Engineering and Environmental Services, Inc. 3301 Atlantic Avenue Raleigh, NC 27604

Subject:

Chemical Analysis of Samples Received on 04-24-98 Williamson, Project No. 30741-8-2867.01.916

Dear Mr. Tyburski:

Law Engineering and Environmental Services, Inc., National Laboratories has completed its analysis of your samples and reports the results on the following pages. These results relate only to the contents of the samples as submitted.

If further assistance is needed, please feel free to contact me at (850) 857-0606 ext. 121.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC. NATIONAL LABORATORIES

Tonya Starr
Project Manager

Enclosures:

Data Report

Invoice

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

--- Sample information -

Time Sampled:

15:35

Lab ID:

B-1 (0.5-1.0)

Log In Date:

04/24/98

Lab ID:

AB46577

Log In Time:

10:24

Collector:

R. TYBURSKI

--- Test Information ---

Analysis

Test Information					Anal	ysis
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-8010 Volatiles Soils ug/Kg	ug/Kg	SW8021B	-		04/29/98	NC
Bromobenzene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Bromodichloromethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Bromoform	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Bromomethane	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
Carbon tetrachloride	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Chlorobenzene	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
Chloroethane	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
2-Chloroethylvinyl ether	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Chloroform	ug/Kg	SW8021B	0.565	Not Det	04/29/98	NC
1-Chlorohexane	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
Chloromethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Dibromochloromethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Dibromomethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,2-Dichlorobenzene	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
1,3-Dichlorobenzene	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
1,4-Dichlorobenzene	ug/Kg	SW8021B	2.26	Not .Det	04/29/98	NC
1,1-Dichloroethane	'na\ka	SW8021B	1.13	Not Det	04/29/98	NC .
1,2-Dichloroethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,1-Dichloroethene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
trans-1,2-Dichloroethene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
cis-1,2-Dichloroethene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,2-Dichloropropane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
cis-1,3-Dichloropropene	ug/Kg	sw8021B	1.13	Not Det	04/29/98	NC
trans-1,3-Dichloropropene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Methylene chloride	ug/Kg	SW8021B	2.26	Not Det	04/29/98	NC
1,1,1,2-Tetrachloroethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,1,2,2-Tetrachloroethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Tetrachloroethene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,1,1-Trichloroethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,1,2-Trichloroethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Trichloroethene	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Trichlorofluoromethane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
1,2,3-Trichloropropane	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC
Vinyl chloride	ug/Kg	SW8021B	1.13	Not Det	04/29/98	NC

LAW ENVIRONMENTAL NATIONAL LABORATORIES

TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 2

LAW Eng. & Env. Svcs., Inc.

Project Name: WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

15:35

B-1 (0.5-1.0)

Time Sampled:

Lab ID:

AB46577

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

--- Test Information ---

Analysis

Parameter sur-1,4-Dichlorobutane %R 50-150 Units ug/Kg

Method Rpt Lim SW8021B 0

Result 96

Date Tech 04/29/98 NC

Remarks:

Signed:

Carl B. Causey

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

•

Raleigh, NC 27604

Williamson 30741-8-2867.01.916

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

B-2 (0.5-1.0)

Time Sampled:

13:40

Lab ID:

Log In Date:

04/24/98

Lau ID.

AB46578

Log In Time:

10:24

Collector:

R. TYBURSKI

	Test Information			Analysis		
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-8010 Volatiles Soils ug/Kg	ug/Kg	SW8021B	•		04/30/98	NC
Bromobenzene	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Bromodichloromethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Bromoform	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Bromomethane	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
Carbon tetrachloride	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Chlorobenzene	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
Chloroethane	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
2-Chloroethylvinyl ether	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Chloroform	ug/Kg	SW8021B	2.46	Not Det	04/30/98	NC
1-Chlorohexane	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
Chloromethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Dibromochloromethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Dibromomethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,2-Dichlorobenzene	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
1,3-Dichlorobenzene	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
1,4-Dichlorobenzene	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
1,1-Dichloroethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,2-Dichloroethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,1-Dichloroethene	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
trans-1,2-Dichloroethene	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
cis-1,2-Dichloroethene	ug/Kg	SW8021B	4.92	65.2	04/30/98	NC
1,2-Dichloropropane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
cis-1,3-Dichloropropene	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
trans-1,3-Dichloropropene	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Methylene chloride	ug/Kg	SW8021B	9.84	Not Det	04/30/98	NC
1,1,1,2-Tetrachloroethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,1,2,2-Tetrachloroethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
. Tetrachloroethene	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,1,1-Trichloroethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,1,2-Trichloroethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
~Trichloroethene	ug/Kg	SW8021B	4.92	7.09	04/30/98	NC
Trichlorofluoromethane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
1,2,3-Trichloropropane	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC
Vinyl chloride	ug/Kg	SW8021B	4.92	Not Det	04/30/98	NC

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 2

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

Time Sampled:

13:40

B-2 (0.5-1.0)

Lab ID:

AB46578

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

--- Test Information ---

Analysis

Parameter sur-1,4-Dichlorobutane %R 50-150 Units ug/Kg

Method Rpt Lim SW8021B 0

Result 102

Tech 04/30/98 NC

Remarks:

Signed:

Carl B. Causey

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

Time Sampled:

14:10

Lab ID:

B-3 (0.5-1.0)

Log In Date:

04/24/98

AB46579

10:24

Collector: R. TYBURSKI

Log In Time:

	Test I	nformation			Anal	ysis
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-8010 Volatiles Soils ug/Kg	ug/Kg	SW8021B	-		04/29/98	NC
Bromobenzene	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Bromodichloromethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Bromoform	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Bromomethane	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
Carbon tetrachloride	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Chlorobenzene	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
Chloroethane	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
2-Chloroethylvinyl ether	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Chloroform	ug/Kg	SW8021B	0.570	Not Det	04/29/98	NC
1-Chlorohexane	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
Chloromethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Dibromochloromethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Dibromomethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
1,2-Dichlorobenzene	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
1,3-Dichlorobenzene	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
1,4-Dichlorobenzene	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
1,1-Dichloroethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
1,2-Dichloroethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
1,1-Dichloroethene	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
trans-1,2-Dichloroethene	ug/Kg	SW8021B	1.14	34.9	04/29/98	NĆ
cis-1,2-Dichloroethene	ug/Kg	SW8021B	142	508	04/29/98	NC
1,2-Dichloropropane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
cis-1,3-Dichloropropene	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
trans-1,3-Dichloropropene	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Methylene chloride	ug/Kg	SW8021B	2.28	Not Det	04/29/98	NC
1,1,1,2-Tetrachloroethane	ug/Kg	SW8021B	1.14	. Not Det	04/29/98	NC
1,1,2,2-Tetrachloroethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Tetrachloroethene	ug/Kg	SW8021B	1.14	20.9	04/29/98	NC
1,1,1-Trichloroethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
1,1,2-Trichloroethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Trichloroethene	ug/Kg ~	SW8021B	1.14	3.13	04/29/98	NC
Trichlorofluoromethane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
1,2,3-Trichloropropane	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC
Vinyl chloride	ug/Kg	SW8021B	1.14	Not Det	04/29/98	NC

LAW ENVIRONMENTAL NATIONAL LABORATORIES

TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 2

Project Name:

WILLCLEA

3301 Atlantic Avenue

LAW Eng. & Env. Svcs., Inc.

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

Time Sampled:

14:10

Lab ID:

B-3 (0.5-1.0) AB46579

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

--- Test Information ---

Analysis

Parameter sur-1,4-Dichlorobutane %R 50-150 Units

Method Rpt Lim

Result 97

Tech

ug/Kg

SW8021B

04/29/98

Remarks:

Signed:

Carl B. Causey

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

B-4 (1.0-1.5)

Time Sampled:

14:35

Lab ID:

AB46580

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

	Test I	nformation			Anal	ysis
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-8010 Volatiles Soils ug/Kg	ug/Kg	SW8021B	-		04/29/98	NC
Bromobenzene	ug/Kg	SW8021B	146	Not Det	04/29/98	ис
Bromodichloromethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Bromoform	ug/Kg	sw8021B	146	Not Det	04/29/98	NC
Bromomethane	ug/Kg	SW8021B	292	579	04/29/98	NC
Carbon tetrachloride	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Chlorobenzene	ug/Kg	SW8021B	292	Not Det	04/29/98	NC
Chloroethane	ug/Kg	SW8021B	292	Not Det	04/29/98	NC
2-Chloroethylvinyl ether	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Chloroform	ug/Kg	SW8021B	73.0	Not Det	04/29/98	NC
1-Chlorohexane	ug/Kg	SW8021B	292	Not Det	04/29/98	NC
Chloromethane	ug/Kg	SW8021B	146	360	04/29/98	NC
Dibromochloromethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Dibromomethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
1,2-Dichlorobenzene	ug/Kg	SW8021B .	292	Not Det	04/29/98	NC
1,3-Dichlorobenzene	ug/Kg	SW8021B	292	Not Det	04/29/98	NC
1,4-Dichlorobenzene	ug/Kg	SW8021B	292	Not Det	04/29/98	NC
1,1-Dichloroethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
1,2-Dichloroethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
1,1-Dichloroethene	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
trans-1,2-Dichloroethene	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
cis-1,2-Dichloroethene	ug/Kg	SW8021B	146	5650	04/29/98	NC
1,2-Dichloropropane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
cis-1,3-Dichloropropene	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
trans-1,3-Dichloropropene	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Methylene chloride	ug/Kg	SW8021B	292	Not Det	04/29/98	NC
1,1,1,2-Tetrachloroethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
1,1,2,2-Tetrachloroethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Tetrachloroethene	ug/Kg	SW8021B	146	1810	04/29/98	NC
1,1,1-Trichloroethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
1,1,2-Trichloroethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
- Trichloroethene	ug/Kg	SW8021B	146	1170	04/29/98	NC
Trichlorofluoromethane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
1,2,3-Trichloropropane	ug/Kg	SW8021B	146	Not Det	04/29/98	NC
Vinyl chloride	ug/Kg	SW8021B	146	Not Det	04/29/98	NC

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 2

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

Time Sampled:

14:35

Lab ID:

B-4 (1.0-1.5) AB46580

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

--- Test Information ---

Analysis

Date

Parameter			
sur-1,4-Dichlorobutane	%R	50-150	

Units	Method
ug/Kg	SW8021B

Rpt Lim

Result 107

Tech 04/29/98

Remarks:

Signed:

Carl B. Causey

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

Time Sampled:

16:15

Lab ID:

TW-1

AB46581

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

	Test	Information	
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Analyzaia

	Test I	nformation		Analys		
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601	_		04/28/98	NC
Bromodichloromethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Bromoform	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Bromomethane	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
Chloroethane	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Chloroform	ug/L	EPA 601	0.500	Not Det	04/28/98	NC
Chloromethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,2-Dichloroethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,1-Dichloroethene	'na\T	EPA 601	1.00	Not Det	04/28/98	NC
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	04/28/98	NČ
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Methylene chloride	ug/L	. EPA 601	2.00	Not Det	04/28/98	NC
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Tetrachloroethene	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Trichloroethene	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	04/28/98	NC
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	04/28/98	NC
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	110	04/28/98	NC

Remarks:

Signed:

Carl B. Causey

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

16:00

TW-2

Time Sampled:

Lab ID: Collector:

AB46582 R. TYBURSKI

Log In Date:

04/24/98

Log In Time: 10:24

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Analysis

	1 est 1		Analysis			
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601			04/28/98	NC
Bromodichloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Bromoform	ug/L	EPA 601	100	Not Det	04/28/98	NC
Bromomethane	ug/L	EPA 601	200	Not Det	04/28/98	NC
Carbon tetrachloride	ug/L	EPA 601	100	Not Det	04/28/98	NC
Chlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
Chloroethane	ug/L	EPA 601	200	Not Det	04/28/98	NC
2-Chloroethylvinyl ether	ug/L	EPA 601	100	Not Det	04/28/98	NC
Chloroform	ug/L	EPA 601	50.0	Not Det	04/28/98	NC
Chloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Dibromochloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,3-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,4-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
Dichlorodifluoromethane	ug/L	EPA 601	100	Not Det	04/28/98	ИC
1,1-Dichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,1-Dichloroethene	'ad\T	EPA 601	100	Not Det	04/28/98	NC
rans-1,2-Dichloroethene	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichloropropane	ug/L	EPA 601	100	Not Det	04/28/98	NC
cis-1,3-Dichloropropene	ug/L	EPA 601	100	Not Det	04/28/98	NĊ
trans-1,3-Dichloropropene	ug/L	EPA 601	100	Not Det	04/28/98	NC
Methylene chloride	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Tetrachloroethene	ug/L	EPA 601	100	466	04/28/98	NC
1,1,1-Trichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,1,2-Trichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Trichloroethene	ug/L	EPA 601	100	342	04/28/98	NC
Trichlorofluoromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Vinyl chloride	ug/L	EPA 601	200	Not Det	04/28/98	NC
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	83	04/28/98	NC

Remarks:

Signed: _

Carl B. Causey

Technical Services Director

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name: WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

TW-3

Time Sampled:

16:20

Lab ID:

AB46583

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

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X	****	14441	

•	Test I	nformation		Analysis		
Parameter	<u>Units</u>	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601	-		04/28/98	NC
Bromodichloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Bromoform	ug/L	EPA 601	100	Not Det	04/28/98	NC
Bromomethane	ug/L	EPA 601	200	Not Det	04/28/98	NC
Carbon tetrachloride	ug/L	EPA 601	100	Not Det	04/28/98	NC
Chlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
Chloroethane	ug/L	EPA 601	200	Not Det	04/28/98	NC
2-Chloroethylvinyl ether	ug/L	EPA 601	100	Not Det	04/28/98	NC
Chloroform	ug/L	EPA 601	50.0	Not Det	04/28/98	NC
Chloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Dibromochloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,3-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,4-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
Dichlorodifluoromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,1-Dichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	иĊ
1,1-Dichloroethene	_ug/L	EPA 601	100	Not Det	04/28/98	NC
trans-1,2-Dichloroethene	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichloropropane	ug/L	EPA 601	100	Not Det	04/28/98	NC
cis-1,3-Dichloropropene	ug/L	EPA 601	100	Not Det	04/28/98	иċ
trans-1,3-Dichloropropene	ug/L	EPA 601	100	Not Det	04/28/98	NC
Methylene chloride	nd\r	EPA 601	200	Not Det	04/28/98	NC
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Tetrachloroethene	ug/L	EPA 601	100	1130	04/28/98	NC
1,1,1-Trichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,1,2-Trichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Trichloroethene	ug/L	EPA 601	100	228	04/28/98	NC
Trichlorofluoromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Vinyl chloride	ug/L	EPA 601	200	Not Det	04/28/98	NC
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	106	04/28/98	NC

Kemarks:

Signed:

Carl B. Causey

Technical Services Director

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

05/01/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.01.916

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

04/23/98

Station ID:

Time Sampled:

16:30

TW-4

Lab ID:

AB46584

Log In Date:

04/24/98

Collector:

R. TYBURSKI

Log In Time:

10:24

Test Information

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	Test I	nformation			Anal	ysis
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601	•		04/28/98	NC
Bromodichloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Bromoform	ug/L	EPA 601	100	Not Det	04/28/98	NC
Bromomethane	ug/L	EPA 601	200	Not Det	04/28/98	NC
Carbon tetrachloride	ug/L	EPA 601	100	Not Det	04/28/98	NC
Chlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
Chloroethane	ug/L	EPA 601	200	Not Det	04/28/98	NC
2-Chloroethylvinyl ether	ug/L	EPA 601	100	Not Det	04/28/98	NC
Chloroform	ug/L	EPA 601	50.0	Not Det	04/28/98	NC
Chloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Dibromochloromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichlorobenzene	ug/L	EPA 601	200	· Not Det	04/28/98	NC
1,3-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,4-Dichlorobenzene	ug/L	EPA 601	200	Not Det	04/28/98	NC
Dichlorodifluoromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,1-Dichloroethane	ug/L .	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	, NC
1,1-Dichloroethene	ʻnd\T	EPA 601	100	Not Det	04/28/98	NC
trans-1,2-Dichloroethene	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,2-Dichloropropane	ug/L	EPA 601	100	Not Det	04/28/98	NC
cis-1,3-Dichloropropene	ug/L	EPA 601	100	Not Det	04/28/98	NC
trans-1,3-Dichloropropene	ug/L	EPA 601	100	Not Det	04/28/98	NC
Methylene chloride	ug/L	EPA 601	200	Not Det	04/28/98	NC
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Tetrachloroethene	ug/L	EPA 601	100	352	04/28/98	NC
1,1,1-Trichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
1,1,2-Trichloroethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Trichloroethene	ug/L	EPA 601	100	188	04/28/98	NC
Trichlorofluoromethane	ug/L	EPA 601	100	Not Det	04/28/98	NC
Vinyl chloride	ug/L	EPA 601	200	Not Det	04/28/98	NC
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	108	04/28/98	NC

Re.narks:

Signed:

Carl B. Causey

Technical Services Director

CHAIN OF CUSTODY

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ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

3355 McLEMORE DRIVE

Tel. (850) 857-0606

_	
	JOB NO. 307411-8-2867 PHASE 01 TASK 9/6
	JOBNAME Wollogmson cleaners - Fikeway
	LAWBRANCH Ruleus 4
	PROJECT MANAGER Jeff Tx burski
	SAMPLED BY JOSE Tyburki
	SAMPLED BY JOHT TY BUNSKI

PENSACOLA, F	L 3251	4		350) 969		SAM	IPLED E	SY	VE	AF.	7 _y 1	DUM	- 41	
SAMPLE INFORMATION					P.	ARAM	ETER	SREC	UEST	ED				
WW – Waste H_20^2 MW – Monitoring Well	SO - SI - PC -	- Soil - Sludg - Paint (- Haz. V	Chip		00		/ //							STAL CHARTILES
SAMPLE ID TIM	-	DATE	MATRIX										/<	LABUSE
B-1 (0.5-10) 33.	5-	4/23	50	X				·					2	A B44577
B-2 (0.5-10) 14			50	X	ļ	ļ		ļ			ļ		2	A B46578
B-) (0.5-1.0) 11		<u> </u>	5.0		ļ	ļ		<u> </u>	ļ <u>.</u>		ļ	<u> </u>	2	AB46579
B-4(1.0-1.5) 23	5		50	X		ļ		<u> </u>			1		2	AB 46580
TW-1 41	,,,,,		<i>C</i> , ,		X			<u> </u>	ļ			 	 	A DILL FOR
TW-1 41		+-	GW		X			ļ			ļ		3	AB41,581
TW-3 4:		11	GW		7	-		· .:	· ·			 	3	AB46582 AB46583
TW-4	30.	1	GW		17		ļ	<u> </u>			,		3	AB46584
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TURN AROUND TIME	ONF	CLIEN	т									IAB	HOE.	
STD) 14-BAYS	X		ESS				LAB USE: COOLER TEMP - 4º C							
RUSH – WITH PRIOR APPROV	AL	CITY _					STATE .		ZIP			1		ALS - INTACT
5 DAY		PHON	E											
48 HR	-	FAX					LAV	v Quo	JTE #					BROKEN
24 HR		PO#											F	NOT PRESENT
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RELINQUISHED BY:			DAT	E	TIN	ΛE			RECE	IVED BY	, ·		DĄT	TE TIME
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ARCADIS GERAGHTY&MILLER

COMPREHENSIVE SITE ASSESSMENT REPORT

APPENDIX B

LAW Report of Additional Investigation, August 21, 1998

Discont cleaners 01-4958



REPORT OF ADDITIONAL ASSESSMENT

WILLIAMSON CLEANERS FIKEWOOD PLAZA WILSON, NORTH CAROLINA

Prepared For:

Williamson Cleaners 1400 Ward Boulevard Wilson, North Carolina 27893

Prepared By:

Law Engineering and Environmental Services, Inc. 3301 Atlantic Avenue Raleigh, North Carolina 27604

August 21, 1998

LAW Job No. 30741-8-2867-01



August 21, 1998

Williamson Cleaners 1400 Ward Boulevard Wilson, North Carolina 27893

Attention:

Mr. Joel Williamson

Subject:

REPORT OF ADDITIONAL ASSESSMENT

WILLIAMSON CLEANERS

FIKEWOOD PLAZA

WILSON, NORTH CAROLINA

LAW ENGINEERING JOB NO. 30741-8-2867-01

Dear Mr. Williamson:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to present the results of our additional environmental services recently performed at the subject site. The purpose of our services was to evaluate the horizontal assessment extent of groundwater contamination, determine shallow groundwater flow direction, and identify the presence of receptors within a 1500-foot radius of the site. Our activities were conducted in general accordance with the scope of work provided in Contract Change Request No. 01, dated June 3, 1998.

We appreciate the opportunity to provide environmental services for this project. If any questions arise regarding this letter report, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

LAW ENGINEER TYPE ENVIRONMENTAL SERVICES, INC.

Jeffrey B. Tybu Senior Geo pgi

JBT/BJB/jbt

Brian J. Bellio

Brian J. Bellis, L.G. by Am with permission

Principal Hydrogeologist

cc: Mr. Kevin Grewell, ECS Insurance - Claims Department

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TABLE OF CONTENTS

SECTION PAGE
1.0 INTRODUCTION AND BACKGROUND1
2.0 SCOPE OF WORK4
3.0 RESULTS OF THE INVESTIGATION6
3.1 Groundwater Flow Conditions 6
3.2 Results of Laboratory Testing 6
3.3 Receptor Survey 8
4.0 CONCLUSIONS AND RECOMMENDATIONS 10
TABLE
1 Summary of Laboratory Analytical Results
DRAWINGS
1 Topographic Site Map
2 Sample Location and Site Utility Map
3 Water-Table Elevation Contour Map
4 Total Volatiles Concentration Map
5 Cross-Section Location Map
6 Cross-Section Diagrams
7 Potential Receptor Survey Map
APPENDICES
A Temporary Well Abandonment Records
B Laboratory Test Report and Chain of Custody



1.0 INTRODUCTION AND BACKGROUND

The subject site is a dry-cleaning facility located within the Fikewood Plaza shopping center (Drawing 1) and has been in operation since 1985. The dry-cleaning machine is a closed-loop system that utilizes tetrachloroethene (Perc) as the cleaning solvent, and has always been operated at its current location within the building. No additional dry-cleaning machines have been located within this building space and no other dry-cleaning facilities have been located within the shopping center since its construction.

Mr. Joel and Judy Williamson reportedly purchased the facility four years ago. At the time of the purchase Mr. Williamson made several upgrades to the dry cleaning machine to improve its efficiency and to address his concerns regarding the operation of the facility and its potential effect on the environment. The dry cleaning machine was recently deactivated and the facility is currently being used as a garment pickup station. Based upon our recent site observations, the deteriorated condition of the paint on the drycleaning machine and the presence of staining on the machine and surrounding concrete floor suggested that Perc may have been released at the facility.

LAW conducted a limited contamination assessment in April of 1998. The objective of our services was to determine the absence or presence of Perc within subsurface soils and/or groundwater at the site. To meet this objective, we advanced four soil borings, (TW-3 through TW-4), to collect soil and groundwater samples for laboratory analysis. Field activities were conducted on April 23, 1998.

Two of the soil borings, TW-3 and TW-4, were advanced within the building through the concrete floor adjacent to the dry-cleaning machine. The two remaining soil borings were advanced through the asphalt outside of the building: one at the location of the boiler condensate discharge pipe (TW-2), and the second where the dumpster was formerly located during the previous ownership of the facility (TW-1). The approximate locations of these soil borings are shown on Drawing 2.



Soil samples were collected from each of the borings during our previous assessment activities at regular depth intervals. A licensed geologist conducted the field activities and manually inspected and screened the soil samples in the field for indications of contamination. A Foxboro organic vapor analyzer (OVA) calibrated to 100 parts per million (ppm) methane was used to screen soil samples using the headspace method. The unsaturated soil sample from each boring that exhibited the greatest indication of contamination was submitted for laboratory analysis. LAW collected groundwater samples from temporary monitoring well installed within each of the four borings.

One unsaturated soil and one groundwater sample were collected from each of the four borings for laboratory analysis. Soil samples were analyzed for halogenated volatile organic compounds using EPA test Method 8010. The groundwater samples were also analyzed for halogenated volatile organic compounds using EPA test Method 601.

Field observations and laboratory test results suggested that Perc was released into subsurface soils and groundwater at the location of the dry cleaning machine and near the back door adjacent to the condensate drip pipe to the boiler. There was no evidence to suggest that dry cleaning solvent had been released as a result of previous use of the dumpster. The extent of soil and groundwater contamination could not be determined and was beyond the scope of the limited contamination assessment (LAW report dated May 4, 1998).

The presence of Perc and trichloroethene (TCE) concentrations in groundwater in excess of their respective standards, established in 15 NCAC 2L. 0202, required that the North Carolina Department of the Environment and Natural Resources (DENR) be notified that a release of dry-cleaning solvent had occurred at the subject property. On June 17, 1998 a letter was sent by LAW to Mr. Jay Zimmerman of the North Carolina Department of Environment and Natural Resources Division of Water Quality (NCDWQ), Raleigh Regional Office to inform DENR of the release of Perc at the subject property. The letter explained that Perc was detected in groundwater in excess its groundwater standard and that activities for additional assessment, including the performance of a receptor survey were in progress. The



letter also explained that a copy of the letter addressed to Mr. Zimmermann and the limited contamination assessment report were being provided Mr. Jack Bulter of the North Carolina Superfund Section since it was our understanding that the responsibility of regulating contaminated dry-cleaning sites was in the process of being transferred to the Superfund Section. The letter and attached report were hand-delivered to Mr. Butler on June 17, 1998.

On July 13, 1998, Mr. Butler sent a letter to LAW regarding the notice of release. The letter explained that the sections of the Dry Cleaning Solvent Cleanup Act that require the Environmental Management Commission (EMC) to enter into Assessment and Remediation Agreements with one or more responsible parties do not become effective until January 1, 1999. For this reason, the North Carolina Superfund Section recommended that this site be addressed under the NCDWQ authority until the EMC receives authority to enter into agreements, and a branch within the Superfund Section to handle dry cleaning release sites is staffed and operating. Alternatively, the Superfund Section can address this site under the Inactive Hazardous Sites Program. The letter stated that in either case, the owner, operator, or responsible party must notify the Superfund Section of this site as prescribed in N.C.G.S. 130A-310.1(b). The letter further stated that after receiving confirmation from the NCDWQ that their office is working with the responsible party to address this site, the Inactive Hazardous Sites Program will classify it as a "Site Remedial Action" under the jurisdiction of the NCDWQ. LAW was subsequently authorized to conduct the additional environmental assessment activities described in the following section.



2.0 SCOPE OF WORK

The purpose of the additional assessment services described in this report was to evaluate the horizontal extent of groundwater contamination, determine shallow groundwater flow direction, and identify the presence of receptors within a 1500-foot radius of the site and evaluate the potential effect the release of Perc may pose to these receptors. Additional soil assessment was not conducted because the water table occurs within two feet of the land surface at the locations where Perc was apparently released into the subsurface.

A total of ten temporary monitoring wells were installed at the site on June 25, 1998 (Drawing 2). Eight of the temporary wells were installed in asphalt and grassed areas around the perimeter of the building using a Geoprobe™ rotary impact hammer system. Continuous soil samples were collected and an open borehole was created using the Geoprobe. Two of the temporary wells were installed through the concrete floor inside the laundromat portion of the building using concrete coring and hand augering methods. Soil samples were collected from the borings for manual inspection and were classified in general accordance with ASTM D-1452. Soil borings were generally installed to depths of approximately eight to twelve feet (below land surface) bls. Each well was constructed of one-inch diameter PVC wellpoint equipped with a five-foot section of 0.010-inch slotted screen. A sand pack was installed around each well screen and bentonite seal was emplaced above the sand pack during the construction of each temporary monitoring well. Each temporary well was abandoned at the completion of field activities by removing the PVC well and backfilling the boring with a cement bentonite grout slurry. Well abandonment records are provided in Appendix A.

Water levels were allowed to stabilize in each well for a period of approximately 24 hours prior to sample collection because of slow groundwater recharge conditions. A groundwater sample was collected from each of the temporary monitoring wells with the exception of temporary well TW-10. A saturated soil sample from the boring for TW-10 was submitted for analysis because there was not a sufficient quantity



of groundwater within the well for a laboratory sample after a period of approximately 24 hours. Each of the ten groundwater samples plus one duplicate and trip blank sample were analyzed for halogenated volatile organic compounds using Standard Method 6230D. The saturated soil sample from temporary monitoring well TW-10, and a composite soil sample of the boring soil cuttings were also analyzed for halogenated volatile organic compounds using EPA test Method 8010.

LAW field personnel surveyed the relative location and top of casing elevation of each temporary monitoring well ,and collected depth to groundwater measurements. This information was used to determine the direction of shallow groundwater flow across the site.

LAW conducted a survey to identify the presence of groundwater users or receptors within a 1,500-foot radius of the site. Receptors typically include subsurface utilities, basements and other similar features, water supply wells and surface water bodies such as lakes, streams and wetland areas. The information obtained from our additional assessment and receptor survey was evaluated to determine if additional assessment will be required to support the development of a corrective action strategy for the site.



3.0 RESULTS OF THE INVESTIGATION

3.1 Groundwater Flow Conditions

Our evaluation of the groundwater data suggests the presence of mounded and/or perched groundwater conditions beneath the building as shown in Drawing 3. Water-table contours are radially distributed around the facility. The depth to groundwater appears to increase from approximately two feet bls beneath the dry-cleaning facility to depths of approximately seven to nine feet bls in the parking lot area surrounding the facility. The presence of a perched and/or mounded groundwater condition beneath the site may be attributed to the presence of a very hard reddish brown clay layer that was detected beneath the site at a depth of approximately nine feet bls and/or possible leakage from the sanitary sewer system.

3.2 Results of Laboratory Testing

Perc and TCE were detected in groundwater from temporary monitoring wells GP-3, GP-4 and GP-5 at concentrations exceeding their respective North Carolina groundwater quality standards. A summary of the laboratory test results is provided in Table 1 and a copy of the laboratory report is provided in Appendix B.

Drawing 4 shows the distribution of total volatile organic compounds (VOCs) in groundwater across the site. Total VOC concentrations were highest in groundwater from temporary wells GP-4 and GP-5. Laboratory test results for the soil sample collected from temporary well TW-10 indicated the presence of trans 1,2, dichloroethene and cis 1,2-dichloroethene and TCE. The distribution of Perc and TCE (total volatiles concentration) across the site, as shown in Drawing 4, indicate a general southwesterly horizontal direction of contaminant migration which is consistent with the groundwater flow directions shown in Drawing 3. The information available at this time suggests that the perched and/or mounded groundwater conditions are localized and have caused shallow groundwater to flow in directions different than would be expected based on the overall south to southeasterly slope of the land surface as shown in Drawing 1. The



presence of Perc and TCE in temporary monitoring well GP-3, that was installed along the southern property line to the shopping center, suggests that contamination may have migrated off-site into an adjacent residential area.

A qualitative approach was utilized to determine if dense non-aqueous phase liquids (DNAPL) may be present in groundwater by comparing dissolved groundwater chemistry data to water solubility values of the detected constituents. DNAPLs may be present if dissolved concentrations in groundwater are greater than one percent of their pure phase solubility (also referred to as their water solubility (EPA, 1992)). Perc has been detected in groundwater from temporary monitoring well TW-3, installed adjacent to the dry-cleaning machine, at a concentration of 1,130 micrograms per liter (ug/L) which represents the maximum concentration of Perc or TCE detected in groundwater at the site. The water solubility of Perc is 150.3 mg/L (at 25 degrees Celsius) which is equal to 150,300 ug/L (Howard, 1991). Dividing the maximum concentration of Perc detected in groundwater at the site (1,130 ug/L)) by the water solubility of Perc (150,300 ug/L), indicates that the dissolved groundwater concentration of Perc is approximately 0.75 percent of its water solubility. Evaluation of groundwater chemistry data from other temporary monitoring wells indicate concentrations of Perc and TCE ranging from 7.5 ug/L to 466 ug/L. This suggests that the probability of DNAPL within groundwater at the site is low.

Our inspection of subsurface soils indicates that they consist of a mottled gray to brown clayey silt to interbedded clayey sand/sandy clay mixtures. A sand layer with varying amounts of silt and clay was encountered at depths ranging from approximately 6.5 to 8 feet bls at boring locations GP-2, GP-3, GP-4, and GP-8. A very hard brown to red clay was encountered at boring location GP-5 at a depth of approximately 9 feet bls. The remaining soil borings were not advanced beyond depth of 8 feet bls and did not encounter this clay layer.

Two cross-sections, the locations of which are shown in Drawing 5, were developed for the site to present lithologic interpretations. Cross-sections, boring log information, and temporary monitoring well constructron details are illustrated in Drawing 6.



Soil cuttings were placed into one 55-gallon drum. The laboratory test results for the composite sample collected from the drum were used to characterize the waste for disposal purposes. The drum of soil was accepted by Garco, Inc. on August 3, 1998 as a non-hazardous waste for disposal at a permitted bioremediation facility.

3.3 Receptor Survey

The results of our receptor survey indicated the presence of eleven private water-supply wells within a 1,500 foot radius of the site with the closest well being located approximately 350 feet from the edge of the shopping center property (Drawing 7). The wells are located in a residential area adjacent to the southeastern portion of the site. Wells 1 through 10 appear to be located topographically downgradient of the dry-cleaning facility. Each of the wells appeared to be a large diameter concrete cast shallow-bored well.

LAW contacted the City of Wilson Engineering Department and conducted a door-to-door survey to determine if the water-supply wells are currently in use. Our results indicate that all of the wells, with the exception of well No. 11, are inactive and that the residents utilize city water. These wells were apparently constructed before the municipal water supply system was installed into the residential area. Although these wells are inactive, they are not abandoned and can potentially be reactivated for future use. Well number 11 is currently active but is located approximately 1,100 feet at a cross-gradient location from the dry-cleaning facility.

A shopping center utility map was obtained from the city of Wilson to identify the presence of subsurface utilities at the site. LAW also confirmed the locations of these utilities in the field since the drawing map does not represent "as-built" conditions. The locations of subsurface utilities at the site are shown in Drawing 2.



The results of utility survey indicated the presence of subsurface sanitary sewer, water, electric, communication and natural gas lines. The sanitary sewer lines within the dry-cleaning facility and adjacent laundry are constructed of PVC at the point where they intersect the concrete floor slab. The main sewer line appears to be constructed of either ductile pipe or a ceramic clay material. The sanitary sewer and waterlines extend from the front of the building and generally extend to the west. Our field observations suggested that the map may not accurately depict the locations of the water and sanitary sewer lines outside of the building. Drawing 2 shows both the mapped and suspected locations of these subsurface utilities.

Perennial streams or surface water bodies were not identified within a 1,500-foot radius of the site. The closest water body is Toisnot Swamp which is located approximately 3,000 feet east of the site.

Cracks and joints were observed in the concrete floor to the facility and adjacent laundromat. The presence of a shallow water-table and the immersion of subsurface utilities below the water-table creates the potential for dry-cleaning solvent vapors to migrate into the building space. Our field observations and interviews with facility employees did not provide evidence to suggest the presence of noticeable odors within the building space.



4.0 CONCLUSIONS AND RECOMMENDATIONS

The horizontal extent of groundwater contamination has not been defined and appears to extend to the southeast of the shopping center property. Although groundwater contamination is present in excess of State groundwater quality standards, we do not have evidence to indicate the presence of DNAPL at the site.

A layer of predominantly sandy soil was generally encountered across the site below the water table and appears to be located above a relatively impermeable clay layer that was encountered at a depth of approximately 9 feet bls. The presence of a relatively permeable sand layer above an relatively impermeable clay layer will likely influence the migration characteristics of Perc and TCE in groundwater. Additional investigation will be required to determine if the sand and clay layers are continuous across the site and if the clay layer is potentially a confining unit. Additional characterization of the shallow subsurface through the installation of permanent Type II monitoring wells would also aid in the determination of the apparent cause of the mounded water-table beneath the facility. One Type III (deep) permanent monitoring well should also be installed outside of the building in the vicinity of temporary monitoring wall GP-4 to evaluate the vertical extent of groundwater contamination. The information from our additional characterization of the shallow subsurface, and the evaluation of shallow groundwater flow characteristics through the installation of the Type II monitoring wells would be used to determine the design and construction specifics for the Type III well.

Our utility survey indicates that subsurface utilities are located below or in close proximity to the water table. At this time, the distribution of Perc and TCE in groundwater across the site does not suggest the preferential migration of groundwater contamination along the fill material to these utilities. We did not identify information to suggest that Perc has been released from the portion of the sanitary sewer line in front of the facility in the vicinity of temporary monitoring wells GP-7 and GP-8. However, additional assessment activities should include the evaluation of groundwater along the portion of the main sanitary



sewer line on the western portion of the shopping center to further evaluate the potential for Perc to have been discharged into, and to have subsequently leaked from the sanitary sewer system.

The presence of contaminated groundwater within two feet of the floor surface of the building, the existence of subsurface utilities below the water-table, and the presence of cracks and joints in the concrete floor create the potential for dry-cleaning solvent vapors to accumulate within the building. Results of our field activities and interviews with facility employees did not provide evidence to suggest the presence of noticeable dry-cleaning solvent odors within the facility as a result of shallow soil or groundwater contamination. Future assessment activities should provide further evaluation of the potential for dry-cleaning solvent vapors to accumulate within the building.

Although eleven private water-supply wells are located within 1,500 feet of the site, the release does not appear to pose a risk of human exposure since ten of the wells are currently inactive, and one is located at a distance of at least 1,100 feet cross-gradient of site. However, the inactive wells are not abandoned and could be reactivated for future use. The potential use of these wells as groundwater sampling locations for future assessment activities should be considered.

Based upon the recommendation of the North Carolina Superfund Section, a copy of this report should be provided to the NCDWQ for their review and files. Additionally, the Superfund Section must have additional release notification documentation as prescribed in N.C.G.S. 130A-310.1(b) which requires the submittal of a "Notification of an Inactive Hazardous Substance or Waste Disposal Site" form.



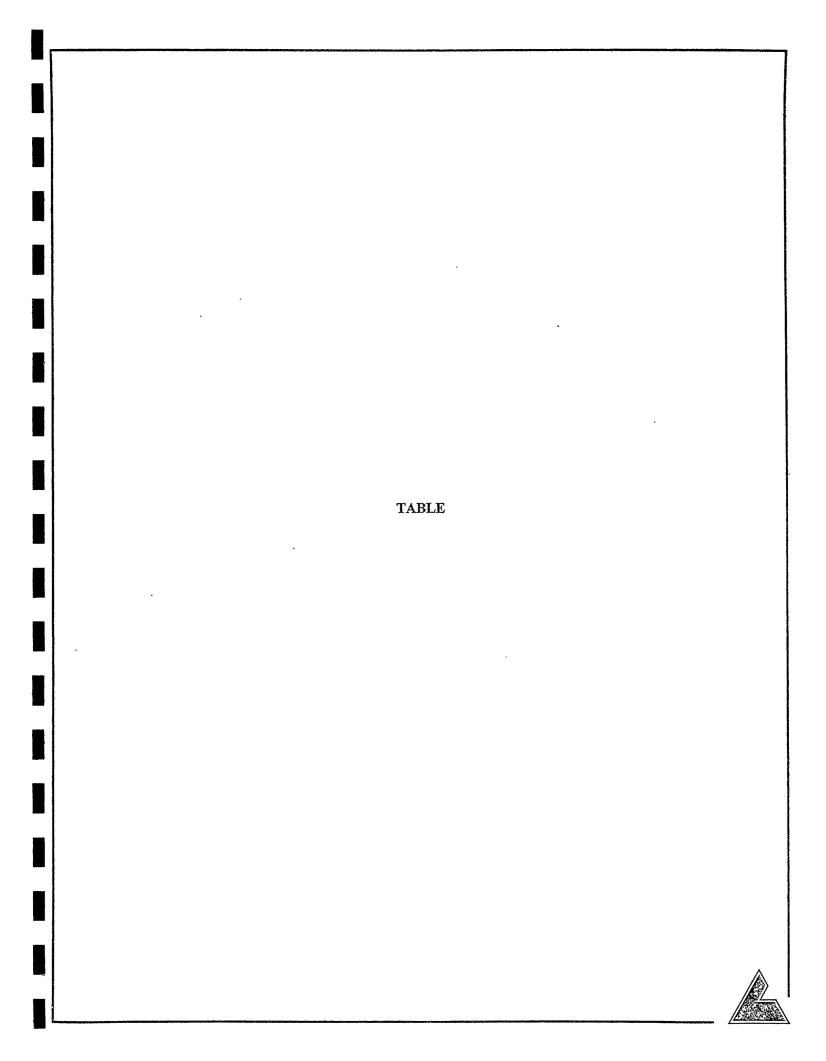


TABLE 1 PAGE 1 OF 2

SUMMARY OF LABORATORY ANALYTICAL RESULTS SOIL AND GROUNDWATER SAMPLES ADDITIONAL ASSESSMENT

WILLIAMSON CLEANERS - FIKEWOOD PLAZA WILSON, NORTH CAROLINA LAW JOB NO. 30741-8-2867-01

PARAMETER	SAMPLE I.D. #	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	N.C. GROUNDWATER STANDARDS
	SAMPLE MATRIX	GW	GW	GW	GW	GW	GW	GW	(ug/L)
	SAMPLE DEPTH (SOIL) SCREENED INTERVAL (GROUNDWATER) (FT)	3 - 8	1 - 6	1 – 6	1 6	3 - 8	3 - 8	3 - 8	Apply To Groundwater (GW) Samples Only
	SAMPLE DATE	6/26/98	6/26/98	6/26/98	6/26/98	6/26/98	6/26/98	6/26/98	
EPA METHODS 80	10 AND 601								
Trans 1,2,Dichlo	roethene (DCE)	ND	ND	ND	ND	ND	ND	ND	70
Cis-1,2-Dichloroethene (DCE)		ND	ND	ND	ND	ND	ND	ND	70
Tetrachloroethene (PCE or "Perc")		ND	ND	36.9	278	45.259.	ND	ND	0.7
Trichloroethene	(TCE)	ND	ND	7.49	1.44.6	\$\frac{14.4}{2}	ND	ND	2.8

All results are ug/L (GW) or ug/Kg (Soil) = Micrograms (ug) per liter (L) or Killogram (Kg) = parts per billion (ppb).

GW Groundwater

ND Not detected; see laboratory reports for applicable detection limits.

na Not analyzed for this parameter

* Groundwater Standards = Laboratory detect limit.

Shaded Area = Concentration detected above NC Groundwater Standards - Groundwater Samples Only

TABLE 1 PAGE 2 OF 2

SUMMARY OF LABORATORY ANALYTICAL RESULTS SOIL AND GROUNDWATER SAMPLES ADDITIONAL ASSESSMENT WILLIAMSON CLEANERS - FIKEWOOD PLAZA WILSON, NORTH CAROLINA LAW JOB NO. 30741-8-2867-01

PARAMETER	SAMPLE I.D. #	GP-8	TW-9	TW-10	GP-14 Dup GP-2	Drum Composite	N.C. Groundwater Standards (ug/L)
	SAMPLE MATRIX	GW	GW	Soil	GW	Soil	
	SAMPLE DEPTH (SOIL) SCREENED INTERVAL (GROUNDWATER) (FT)	3 – 8	3 – 8	2-3	1 – 6	N/A	Apply To Groundwater (GW) Samples Only
	SAMPLE DATE	6/26/98	6/26/98	6/26/98	6/26/98	6/25/98	
EPA METHODS 8010) AND 601						
Trans 1,2,Dichloro	ethene (DCE)	ND	ND	4.16	ND	2.96	70
Cis 1,2 Dichloroethene (DCE)		ND	ND	98.6	ND	70.3	70
Tetrachloroethene (PCE or "Perc")		ND	ND	ND	ND .	ND	0.7
Trichloroethene (T	CE)	ND	ND	8.70	ND	22.4	2.8

All results are ug/L (GW) or ug/Kg (Soil) = Micrograms (ug) per liter (L) or Killogram (Kg) = parts per billion (ppb).

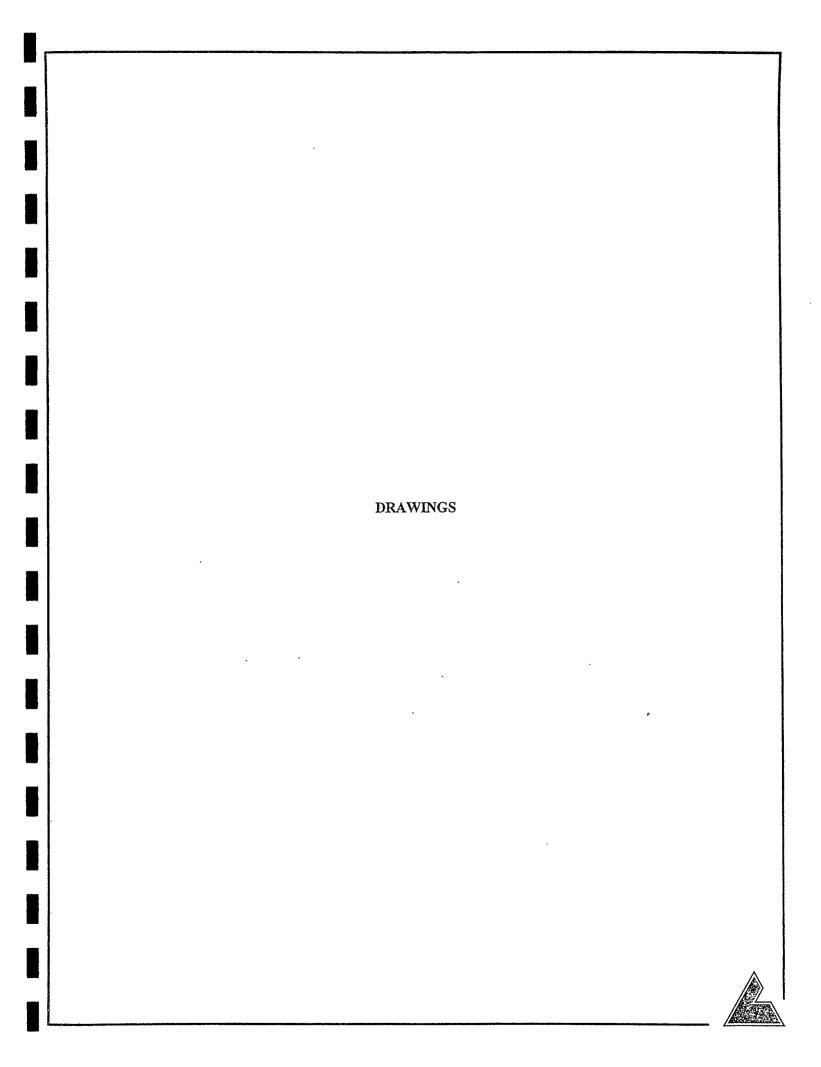
GW Groundwater

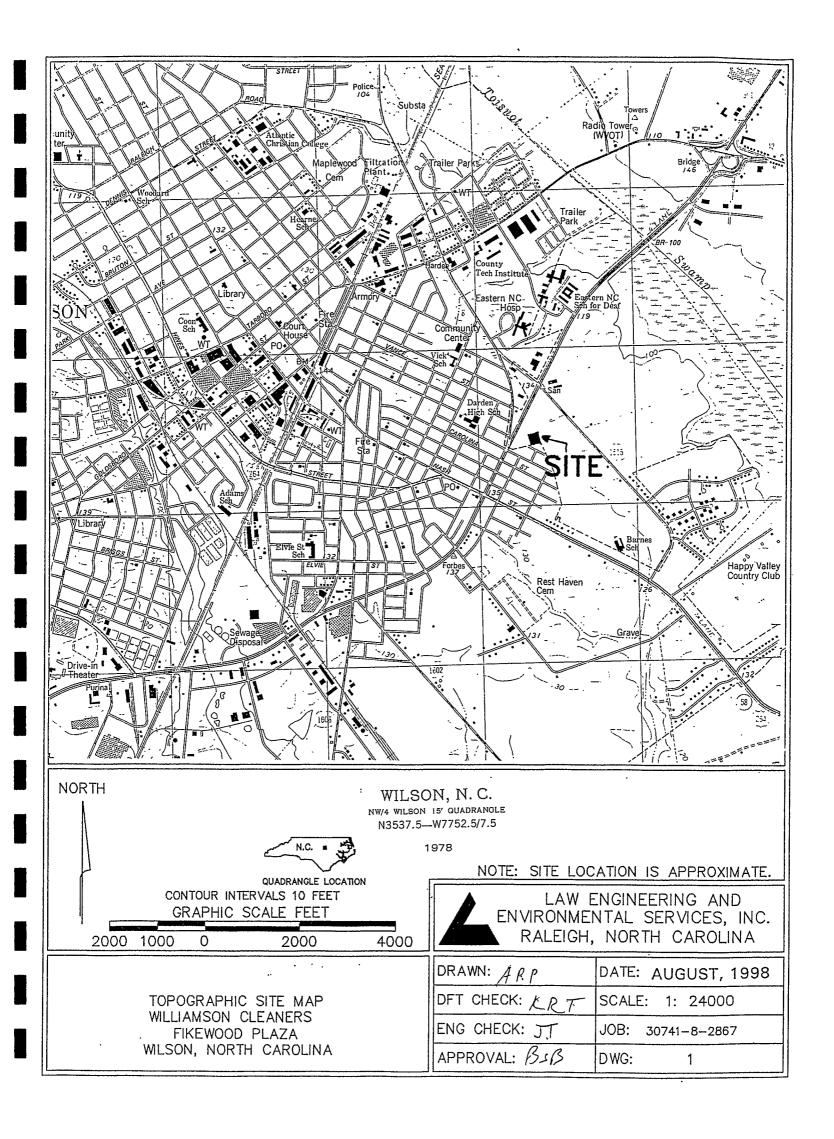
ND Not detected; see laboratory reports for applicable detection limits.

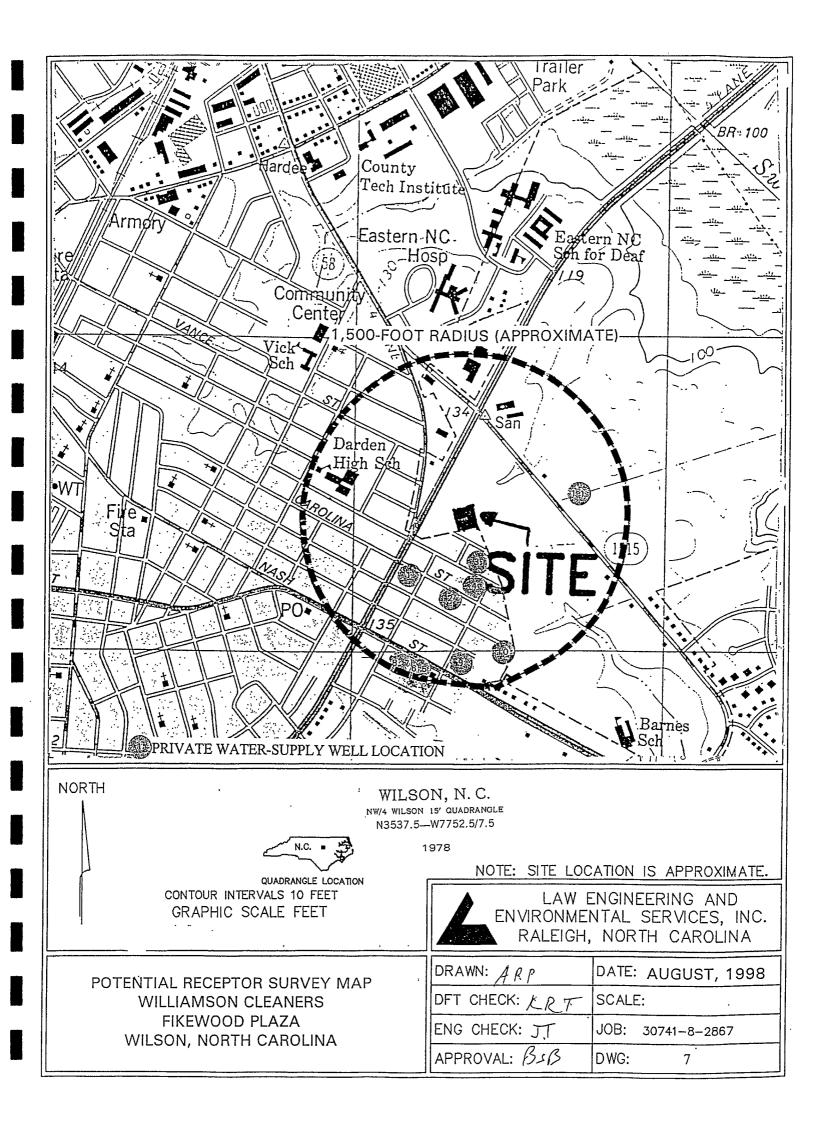
na Not analyzed for this parameter

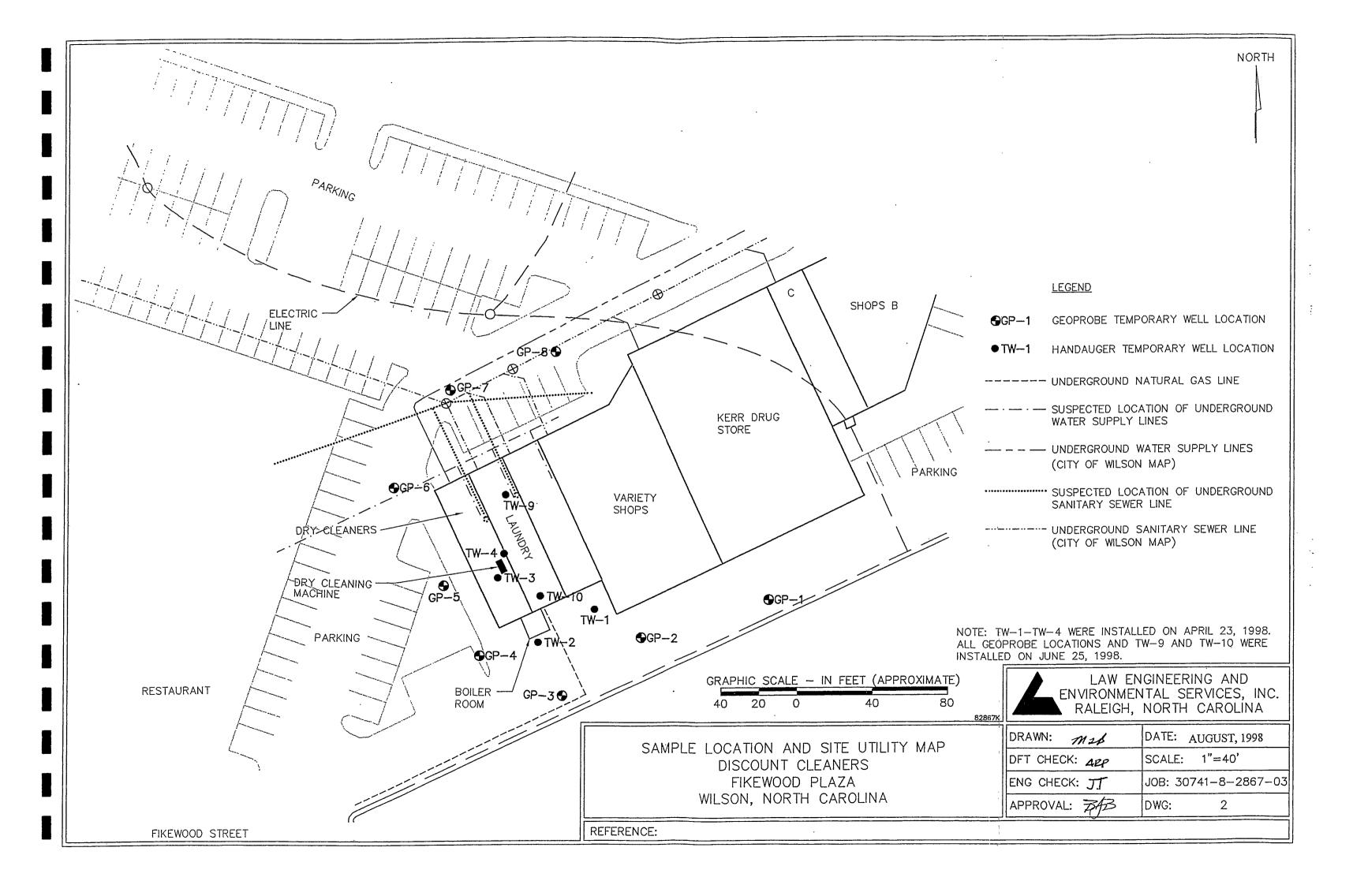
* Groundwater Standards = Laboratory detect limit.

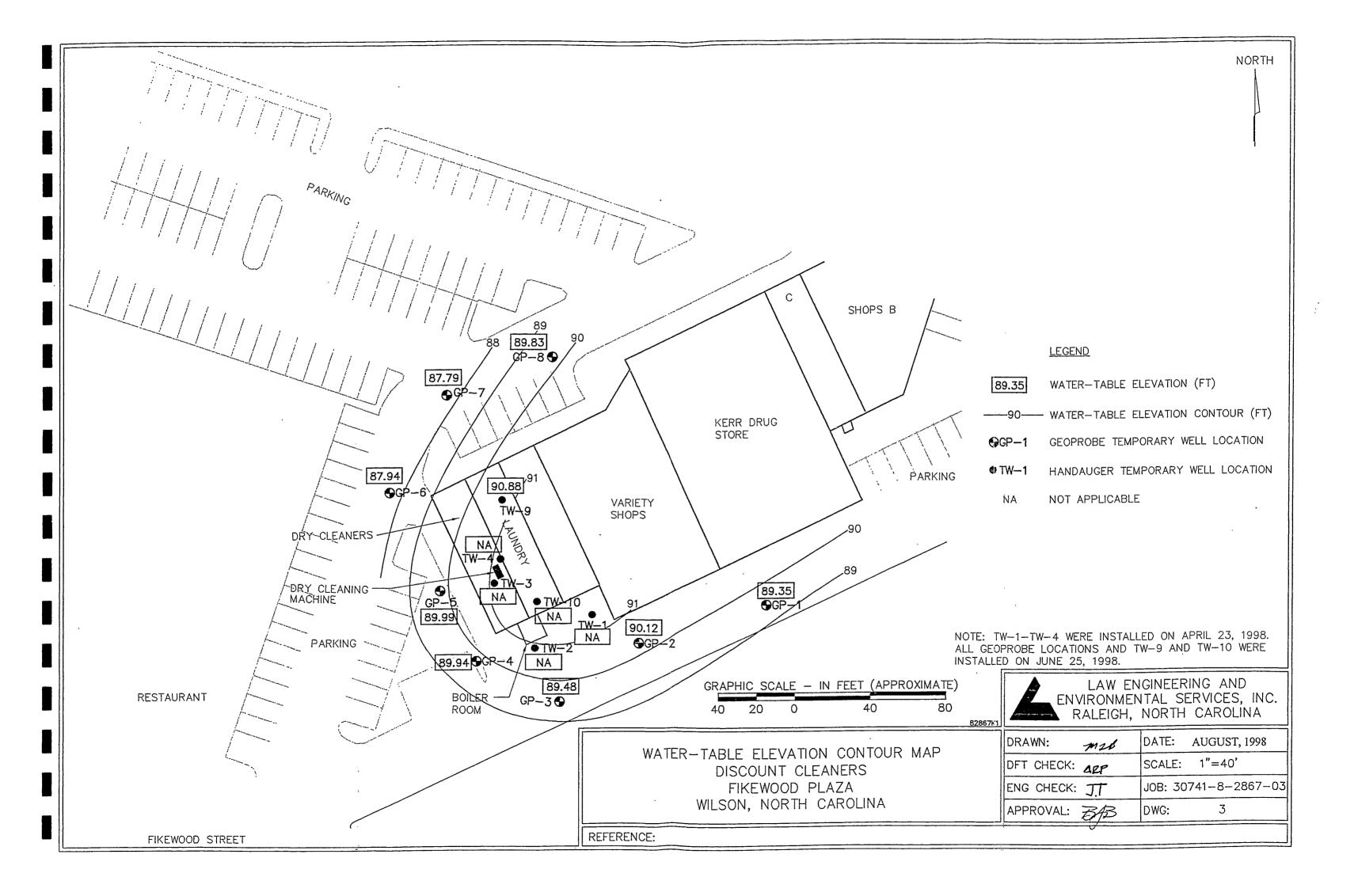
Shaded Area = Concentration detected above NC Groundwater Standards - Groundwater Samples Only

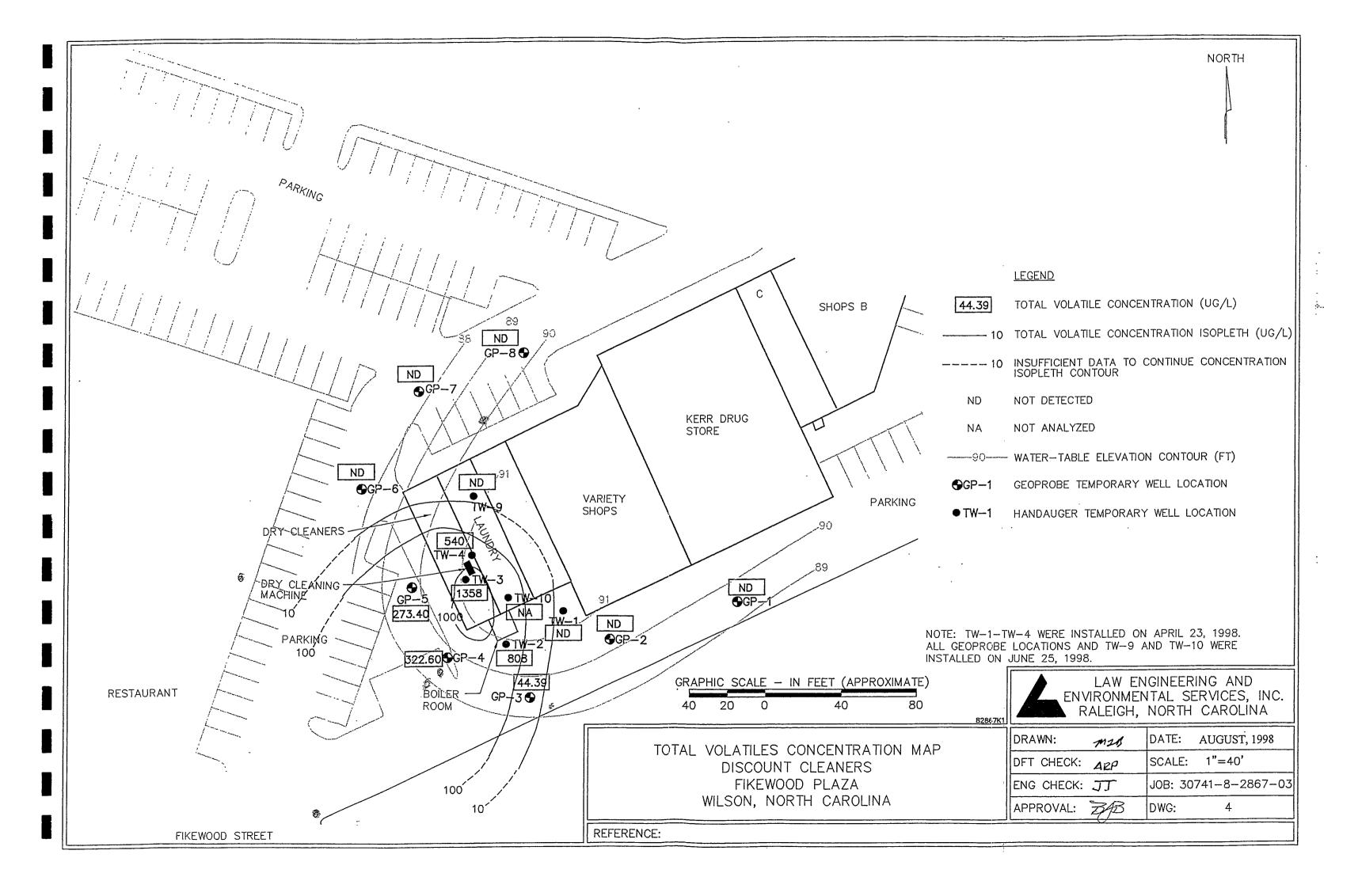


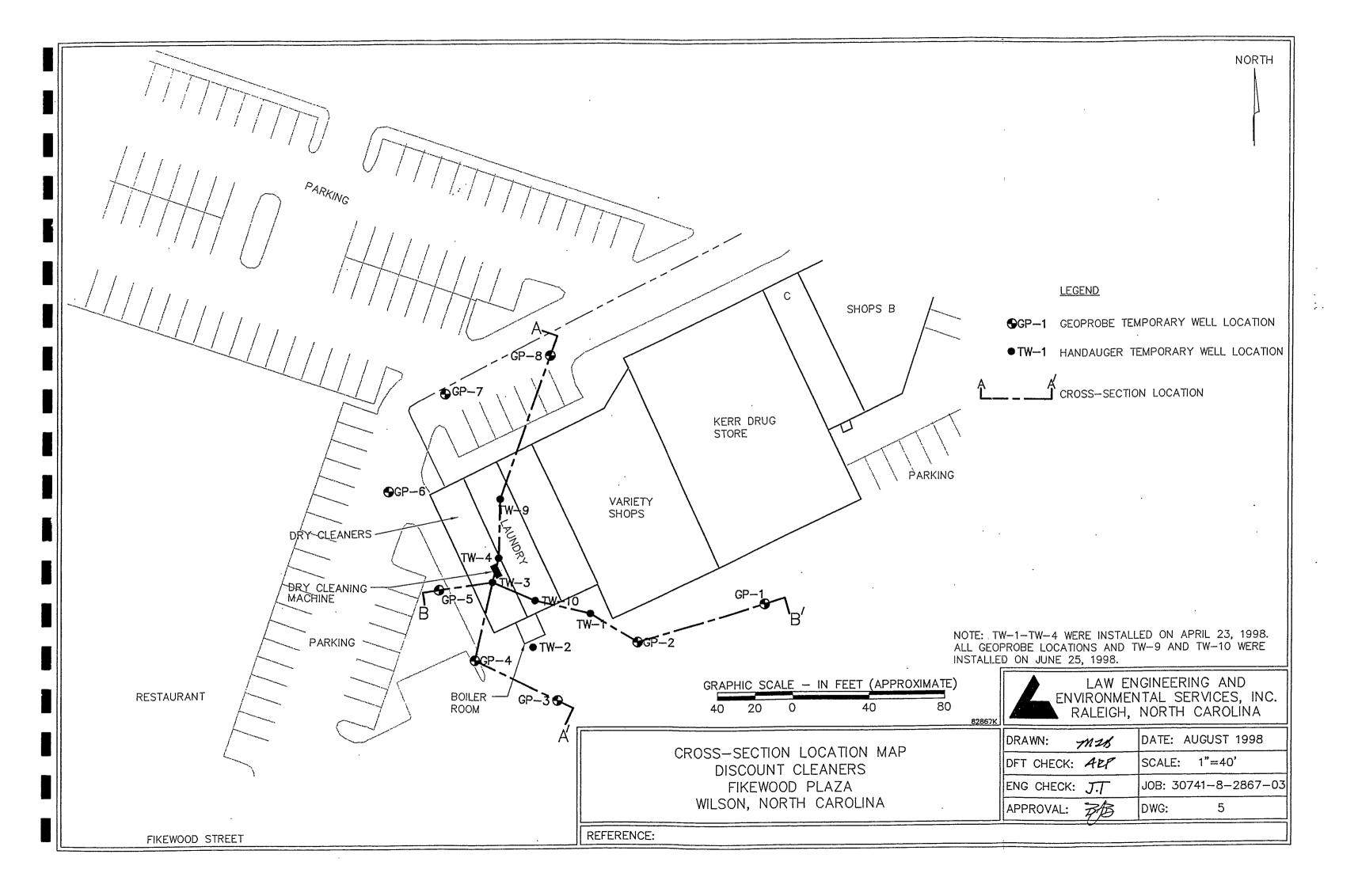


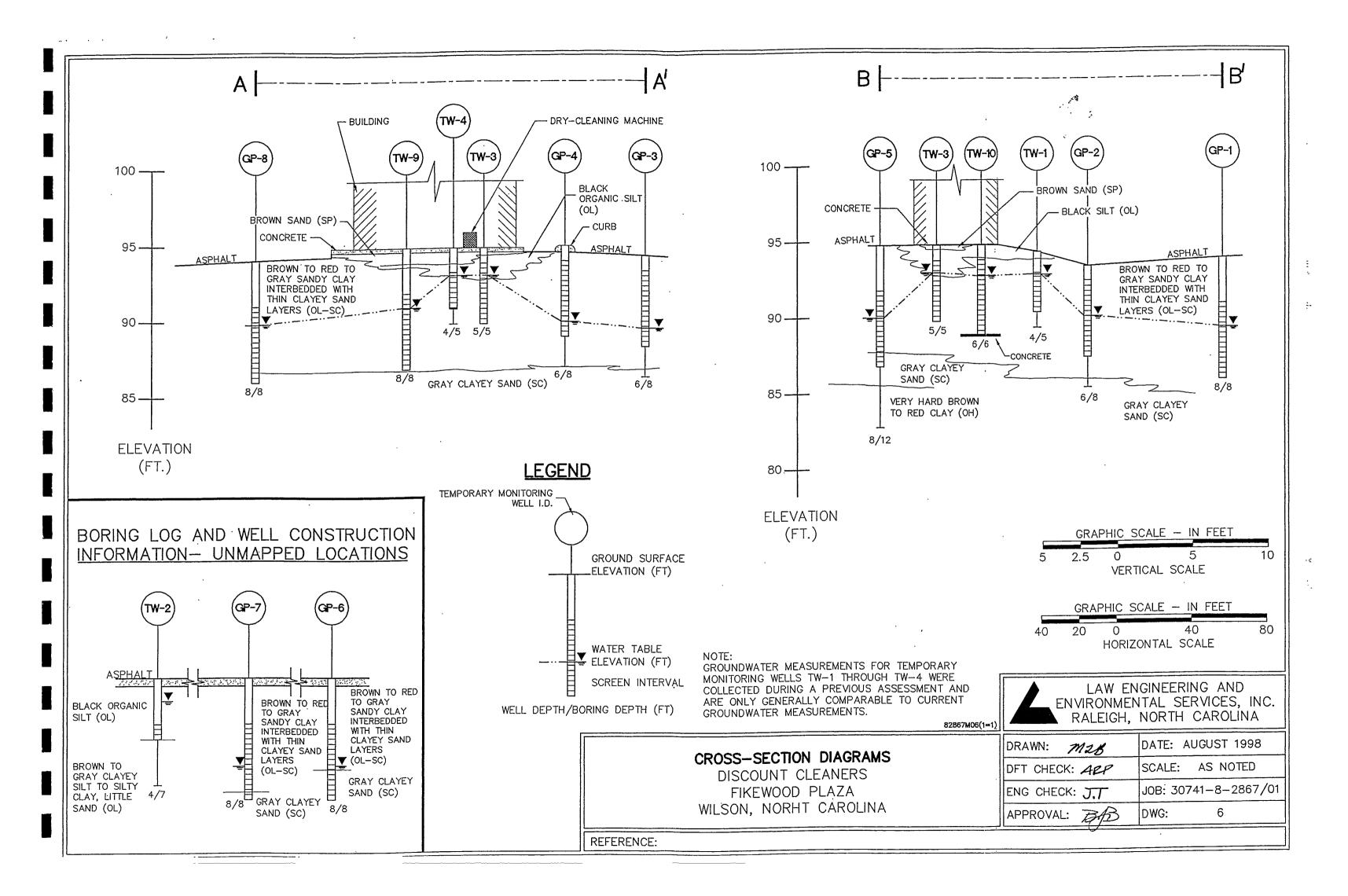


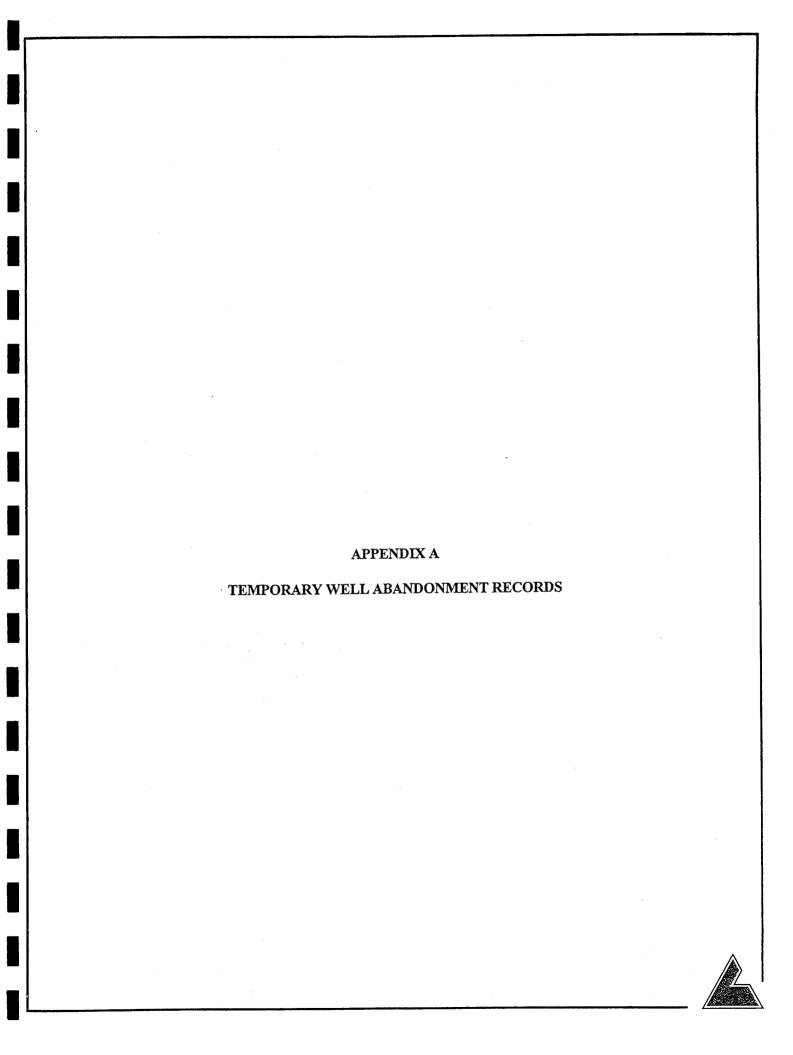












North Carolina Department of Environment, Health, & Natural Resources Division of Environmental Management

Groundwater Section

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

GW-30 Revised 7/17/92

CONTRACTOR: LAW Engineering	REG. NO. 332
Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza (Road, Community, Subdivision, Lot No.)	Temporary Monitoring Well - Tw-l County: Wilson Wilson Quad Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard. Wislon. NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 4/23/98 6. TOTAL DEPTH: 4.0 DIAMETER: 2-inch 7. CASING REMOVED: feet	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - 2 inch Bentonite 0.5(ft) Well Depth 4-0 (ft)
Other Type material:bentonite powder Amount:0.25 bag(s)	1.5 (ft)
Pull PVC wellpoint installbentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and e	exact.
Signature of Contractor or Agent	Date 8/20/98
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) near as roads, intersection, and streams. Identify ridentification numbers. See attached re-	arby reference points such
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza	County: Wilson Wilson Quad
(Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 4/28/98	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - 2 inch
6. TOTAL DEPTH: 6.0 DIAMETER: 2-inch 7. CASING REMOVED: diameter 2-inch 8. SEALING MATERIAL: Neat cement Sand cement bags of cement 0.75 bags of cement gals. of water 1.25 yds. of sand gals. of water	Total Depth 7.0 (ft) Screen Interval I.5 (ft)
Other Type material: bentonite powder	
Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpoint install bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and	l exact.
Signature of Contractor or Agent	Date 8/20/98
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) n as roads, intersection, and streams. Identify	s sheet showing the direction learby reference points such
Submit original to the Division of Environmental Management, one cop	y to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
. WELL LOCATION: (Show a sketch of the location on back of form.) Nearest Town: Wilson	County: Wilson
700 Highway 301 N - Fikewood (Shopping) Plaza	Wilson Quad Quadrangle No.
(Road, Community, Subdivision, Lot No.)	Quadrangie ivo.
2. OWNER: Mr. Joel Williamson	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter
3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893	of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and
4. TOPOGRAPHY: draw, slope, hilltop, valley, flat	types of fill materials used. Well Diameter - 2 inch
5. USE OF WELL: Monitoring DATE: 4/23/98	
6. TOTAL DEPTH: 5.0 DIAMETER: 2-inch	Bentonite
7. CASING REMOVED:	0.5(ft)
feet diameter 5.0 2 -inch	Total Depth Well Depth
<u> </u>	5.0 (ft) 5.0 (ft)
8. SEALING MATERIAL:	
Neat cement Sand cement bags of cement 0.75 bags of cement	
bags of cement 0.75 bags of cement gals. of water 1.25 yds. of sand	Screen
gals. of water	Interval
	1.O(ft)
Other The protection bentanita powder	
Type material: <u>bentonite powder</u>	
Amount: 0.25 bag(s)	
₽. EXPLAIN METHOD EMPLACEMENT OF MATERIAL:	See attached report for map location
Pull PVC wellpoint instal bentonite-cement grout mix into	bee accessed report for map recention
borehole	
I do hereby certify that this well abandonment record is true and o	,
Signature of Contractor or Agent	Date
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) ne	sheet showing the direction
as roads, intersection, and streams. Identify	
	eport for the requested information.
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.
GW-30 Revised 7/17/92	

P.O. Box 29535 - Raleigh, N.C.	
WELL ABANDONMENT RECORD	REG. NO. 332
CONTRACTOR: LAW Engineering	REG. NO. 332
Nearest Town: Wilson Wilson	Temporary Monitoring Well - 7 County: Wilson
700 Highway 301 N - Fikewood (Shopping) Plaza	Wilson Quad
(Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson	WELL DIAGRAM: Draw a detailed sketthe well showing total depth, depth and of
3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893	of screens remaining in the well, gravel intervals of casing perforations, and dep
1. TOPOGRAPHY: draw, slope, hilltop, valley, flat	types of fill materials used.

DATE: 4/23/98

5. TOTAL DEPTH: 5.0 DIAMETER: 2-inch

. CASING REMOVED:

5. USE OF WELL: Monitoring

diameter 1-inch

SEALING MATERIAL:

Neat cement bags of cement 0.75 gals. of water

Sand cement bags of cement yds. of sand gals. of water

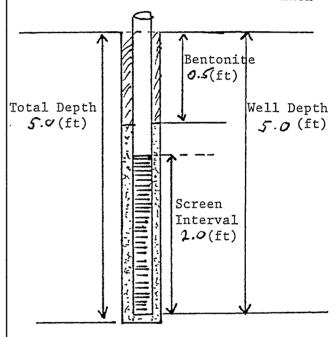
Type material: bentonite powder

Amount: <u>0.25 bag(s)</u>

9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpointinstall bentonite-cement grout mix into borehole

etch of diameter interval, ths and

Well Diameter - 2inch



See attached report for map location

I do hereby certify that this well abandonment record is true and exact.

Signature of Contractor or Agent

WELL LOCATION:

Draw a location sketch on the reverse of this sheet showing the direction and distance of the well to at least two (2) nearby reference points such as roads, intersection, and streams. Identify roads with State Highway road

identification numbers. See attached report for the requested information.

Submit original to the Division of Environmental Management, one copy to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

VELL ABANDONMENT RECORD

	Engineering	REG. NO. 332
Nearest Town: 700 Highway 30	(Show a sketch of the location on back of form.) Wilson 1 N - Fikewood (Shopping) Plaza Community, Subdivision, Lot No.)	Temporary Monitoring Well - GP-/ County: Wilson Wilson Quad Quadrangle No.
	Vard Boulevard, Wislon, NC 27893 aw, slope, hilltop, valley, flat DATE: 6/26/98 BO DIAMETER: 1 -inch Ciameter 1 -inch AL: Sand cement bags of cement	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter -/ inc Bentonite 0.5(ft) Well De 8.0 (
	gals. of water te powder EMPLACEMENT OF MATERIAL: stall bentonite-cement grout mix into	See attached report for map location
I do hereby certi	fy that this well abandonment record is true and entractor or Agent	xact. Date 8/20/98

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form. Nearest Town: Wilson	Temporary Monitoring Well - 69-2 County: Wilson Wilson Quad
700 Highway 301 N - Fikewood (Shopping) Plaza (Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and
4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98 6. TOTAL DEPTH: 6.0 DIAMETER: 1inch	types of fill materials used. Well Diameter - /inch Bentonite
7. CASING REMOVED: feet	Total Depth 8.0 (ft) Screen Interval
Other Type material: bentonite powder Amount: 0.25 bag(s)	5-0(ft)
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpoint installbentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and Signature of Contractor or Agent	
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) no as roads, intersection, and streams. Identify	sheet showing the direction earby reference points such
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
. WELL LOCATION: (Show a sketch of the location on back of form.) Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza (Road, Community, Subdivision, Lot No.)	Temporary Monitoring Well - GP-3 County: Wilson Wilson Quad Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard. Wislon, NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98 5. TOTAL DEPTH: 6-0 DIAMETER: 1inch 7. CASING REMOVED: feet	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - / inch Bentonite Screen Interval 5.0(ft)
Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpointinstall bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and experience. Signature of Contractor or Agent WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) near as roads, intersection, and streams. Identify records as roads.	Date 8/20/98 sheet showing the direction arby reference points such roads with State Highway road
identification numbers. See attached re Submit original to the Division of Environmental Management, one copy	eport for the requested information. to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RI	ECORI	RE	ENT	ME)N	ND	RA	Τ.,	WET
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CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form.) Nearest Town: <u>Wilson</u> 700 Highway 301 N - Fikewood (Shopping) Plaza	Temporary Monitoring Well - GP-4 County: Wilson Wilson Quad Quadrangle No.
(Road, Community, Subdivision, Lot No.) 2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98 6. TOTAL DEPTH: 6.0 DIAMETER: 1inch 7. CASING REMOVED: feet	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - /inch Bentonite O.S(ft) Well Depth G.O (ft)
gals. of water Other Type material: bentonite powder Amount: 0.25 bag(s)	Interval 5. (ft)
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpoint installbentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and of Signature of Contractor or Agent WELL LOCATION: Draw a location sketch on the reverse of this	Date 8/20/98
and distance of the well to at least two (2) ne as roads, intersection, and streams. Identify	arby reference points such roads with State Highway road eport for the requested information.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

	WEL.	L ABAI	VDC	NM(ENT	RECORD
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CONTRACTOR: LAW Engineering	REG. NO. 332
1. WELL LOCATION: (Show a sketch of the location on back of form.) Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza	Temporary Monitoring Well - GP-5 County: Wilson Wilson Quad
(Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval,
4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98	intervals of casing perforations, and depths and types of fill materials used. Well Diameter - (inch
6. TOTAL DEPTH: 8.0 DIAMETER: 1inch	Bentonite OS(ft)
7. CASING REMOVED: feet g.o	Total Depth // Well Depti
8. SEALING MATERIAL: Neat cement bags of cement gals. of water 1.25 Neat cement bags of cement bags of cement yds. of sand gals. of water	Screen Interval 5.0(ft)
Other Type material: bentonite powder	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpointinstall: bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and e	
Signature of Contractor or Agent	Date 8/20/98
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) near as roads, intersection, and streams. Identify respectively.	sheet showing the direction arby reference points such
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form. Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza	County: Wilson Wilson Quad Quadrangle No.
(Road, Community, Subdivision, Lot No.)	Quadrangle 140.
2. OWNER: Mr. Joel Williamson	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter
3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893	of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and
4. TOPOGRAPHY: draw, slope, hilltop, valley, flat	types of fill materials used. Well Diameter - /inch
5. USE OF WELL: Monitoring DATE: 6/26/98	Well Blameter - /Inch
6. TOTAL DEPTH: 4.0 DIAMETER: 1inch	Bentonite
7. CASING REMOVED:	0.5(ft)
feet diameter /-inch	Total Depth Well Depth 8.0(ft)
B. SEALING MATERIAL: Neat cement bags of cement gals. of water 1.25 Sand cement bags of cement yds. of sand gals. of water gals. of water	Screen Interval 5.0(ft)
Other Type material: _bentonite powder	
Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpoint install bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and o	exact.
Signature of Contractor or Agent	Date 8/20/88
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) ne as roads, intersection, and streams. Identify identification numbers. See attached r	arby reference points such
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form.) Nearest Town: Wilson	Temporary Monitoring Well - 69-7 County: Wilson
700 Highway 301 N - Fikewood (Shopping) Plaza (Road, Community, Subdivision, Lot No.)	Wilson Quad Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98 6. TOTAL DEPTH: 8.0 DIAMETER: 1:-inch	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - / inch Bentonite O. (ft)
7. CASING REMOVED: feet	Total Depth 8.0 (ft) Screen Interval 5.0(ft)
Other Type material: bentonite powder	
Amount: 0.25 bag(s) 9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpointinstall bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and o	
Signature of Contractor or Agent	Date 8/20/98
	arby reference points such roads with State Highway road eport for the requested information.
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

North Carolina

Department of Environment, Health, & Natural Resources

Division of Environmental Management

Groundwater Section

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
1. WELL LOCATION: (Show a sketch of the location on back of form.) Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza	County: Wilson Wilson Quad
(Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter
3. ADDRESS: 1400 Ward Boulevard. Wislon. NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat	of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.
5. USE OF WELL: <u>Monitoring</u> DATE: <u>6/26/98</u>	Well Diameter - / inch
6. TOTAL DEPTH: 9.0 DIAMETER: 1inch	Bentonite 0.5(ft)
7. CASING REMOVED: <u>feet</u> <u>diameter</u> <u>-inch</u>	Total Depth 8.0 (ft) 8.6 (ft
8. SEALING MATERIAL: Neat cement bags of cement 0.75 bags of cement gals. of water 1.25 yds. of sand gals. of water	Screen Interval 5.0(ft)
Other The rest wish hartenite powder	
Type material: <u>bentonite powder</u> Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpointinstall bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and	<i></i>
Signature of Contractor or Agent	Date 8/20/98
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) ne as roads, intersection, and streams. Identify identification numbers. See attached respectively.	arby reference points such
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form. Nearest Town: Wilson) Temporary Monitoring Well - TW-9 County: Wilson Wilson Quad
700 Highway 301 N - Fikewood (Shopping) Plaza (Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98 6. TOTAL DEPTH: 8.0 DIAMETER: 1 -inch 7. CASING REMOVED: feet diameter 7. inch 8. SEALING MATERIAL:	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - I inch Bentonite O.S(ft) Well Depth 8.0 (ft)
Neat cement bags of cement bags of cement gals. of water Other Type material: Sand cement bags of cement bags of cement yds. of sand gals. of water	Screen Interval 5.0(ft)
Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpointinstall bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true and	exact.
Signature of Contractor or Agent	1 Date 8/20/98
WELL LOCATION: Draw a location sketch on the reverse of this and distance of the well to at least two (2) no as roads, intersection, and streams. Identify	earby reference points such
Submit original to the Division of Environmental Management, one copy	to the Driller, and one copy to the owner.

North Carolina

Department of Environment, Health, & Natural Resources

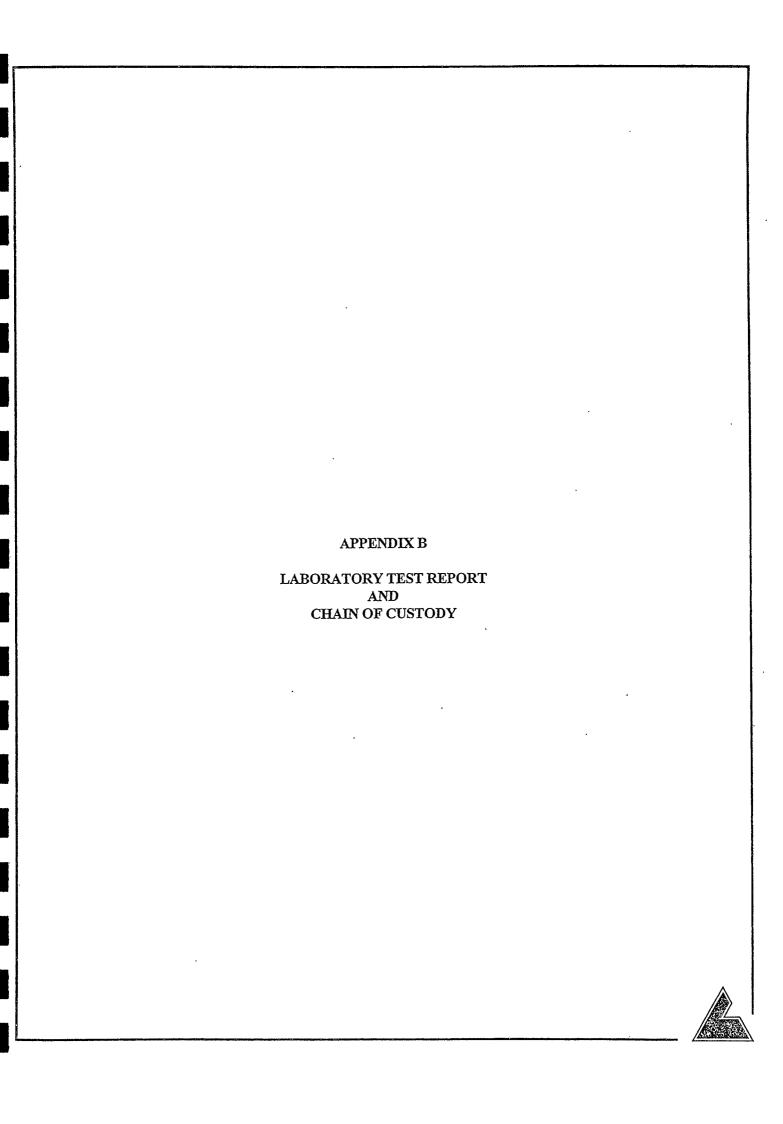
Division of Environmental Management

Groundwater Section

P.O. Box 29535 - Raleigh, N.C. 27626-0535

WELL ABANDONMENT RECORD

CONTRACTOR: LAW Engineering	REG. NO. 332
WELL LOCATION: (Show a sketch of the location on back of form Nearest Town: Wilson 700 Highway 301 N - Fikewood (Shopping) Plaza	n.) Temporary Monitoring Well - TW-/O County: Wilson Wilson Quad
(Road, Community, Subdivision, Lot No.)	Quadrangle No.
2. OWNER: Mr. Joel Williamson 3. ADDRESS: 1400 Ward Boulevard, Wislon, NC 27893 4. TOPOGRAPHY: draw, slope, hilltop, valley, flat 5. USE OF WELL: Monitoring DATE: 6/26/98 6. TOTAL DEPTH: 6.0 DIAMETER: 1 -inch 7. CASING REMOVED: feet diameter 1 -inch 8. SEALING MATERIAL: Neat cement bags of cement 0.75 bags of cement yds. of sand gals. of water Other	WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used. Well Diameter - / inch Bentonite O.5(ft) Well Depth 6.0 (ft) Screen Interval 5.0(ft)
Type material: <u>bentonite powder</u>	
Amount: 0.25 bag(s)	
9. EXPLAIN METHOD EMPLACEMENT OF MATERIAL: Pull PVC wellpoint install bentonite-cement grout mix into borehole	See attached report for map location
I do hereby certify that this well abandonment record is true an	/
Signature of Contractor or Agent	Date 8/20/98
WELL LOCATION: Draw a location sketch on the reverse of the and distance of the well to at least two (2) as roads, intersection, and streams. Identify	nearby reference points such
Submit original to the Division of Environmental Management, one col	by to the Driller, and one copy to the owner.





July 7, 1998

Mr. Jeff Tyburski LAW Eng. & Env. Svcs., Inc. 3301 Atlantic Avenue Raleigh, NC 27604

Subject:

Chemical Analysis of Samples Received on 06/27/98 Williamson, Project No. 30741-8-2867.03.917

Dear Mr. Tyburski:

Law Engineering and Environmental Services, Inc., National Laboratories has completed its analysis of your samples and reports the results on the following pages. These results relate only to the contents of the samples as submitted.

If further assistance is needed, please feel free to contact me at (850) 857-0606 ext. 155.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC. NATIONAL LABORATORIES

Bill Hardesty Project Manager

Enclosures:

Data Report

Invoice

Bill Hardesty

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name: WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

06/26/98

Station ID:

GP-1

08:00

Lab ID:

AB51669

Time Sampled:

06/27/98

Collector:

G. FISCHER

Log In Time: 13:26

Date Sampled:

Log In Date:

	Test I	nformation		Anal	ysis	
Parameter	Units	Method	Result	Date	Tech	
10621-601 VOA by GC ug/L	ug/L	EPA 601	_		07/01/98	JP
Bromodichloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Bromoform	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Bromomethane	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Chloroethane	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Chloroform	ug/L	EPA 601	0.500	Not Det	07/01/98	JP
Chloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	, J.Þ
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Methylene chloride	ug/L	EPA 601	2.00	Not Det	07/01/98	J₽
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Tetrachloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Trichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	130	07/01/98	JP

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

LAW Eng. & Env. Svcs., Inc.

3301 Atlantic Avenue

Raleigh, NC 27604

Station ID:

Lab ID:

Collector:

--- Sample Information ---

Date Sampled:

Project Name:

Page 1

06/26/98

WILLCLEA

Time Sampled:

08:30

Williamson 30741-8-2867.03.917

Log In Date:

06/27/98

Log In Time:

13:26

G. FISCHER

AB51670

GP-2

	Test I	Anal	ysis			
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601	~		07/01/98	JP
Bromodichloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Bromoform	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Bromomethane	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Chloroethane	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Chloroform	ug/L	EPA 601	0.500	Not Det	07/01/98	JP
Chloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichloroethane	ug/L	. EPA 601	1.00	Not Det	07/01/98	JP
1,1-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/01/98	JР
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Methylene chloride	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Tetrachloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Trichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0 .	124	07/01/98	JP

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

06/26/98

Station ID:

GP-14

Time Sampled: 09:05

Lab ID:

AB51671

Log In Date:

Date Sampled:

06/27/98 13:26

Collector:

G. FISCHER

Log In Time:

1	Test I	Anal	lysis			
Parameter	Units	Method	Rpt Lim	Result	<u>Date</u>	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601	•		07/01/98	JР
Bromodichloromethane .	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Bromoform	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Bromomethane	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Chloroethane	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Chloroform	ug/L	EPA 601	0.500	Not Det	07/01/98	JΡ
Chloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Methylene chloride	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Tetrachloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP .
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Trichloroethene	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	07/01/98	JP
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	07/01/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	109	07/01/98	JP

Signed: Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

Station ID:

06/26/98

GP-3

09:25 Time Sampled:

Lab ID:

AB51672

Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

13:26

 Test	Inform	ation	

Analysis

	Test I	Anai	/S1S			
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601			07/02/98	JP
Bromodichloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Bromoform	ug/L	EPA 601	2.00	Not Det	07/02/98	JР
Bromomethane	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
Carbon tetrachloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Chlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
Chloroethane	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Chloroform	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Dibromochloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JР
1,1-Dichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,2-Dichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1-Dichloroethene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
trans-1,2-Dichloroethene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,2-Dichloropropane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
cis-1,3-Dichloropropene	ug/L	EPA 601	2.00	Not Det	07/02/98	JР
trans-1,3-Dichloropropene	ug/L	EPA 601	2.00	Not Det	07/02/98	JР
Methylene chloride	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Tetrachloroethene	ug/L	EPA 601	2.00	36.9	07/02/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Trichloroethene	ug/L	EPA 601	2.00	7.49	07/02/98	JP
Trichlorofluoromethane	ng/F	EPA 601	2.00	Not Det	07/02/98	JP
Vinyl chloride	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	120	07/02/98	JP

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name: WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

06/26/98

Station ID:

09:55

GP-4

Time Sampled:

Lab ID:

AB51673

06/27/98

Collector:

G. FISCHER

Log In Date: Log In Time:

Date Sampled:

13:26

•	Test Information						
Parameter	Units	Date	Tech				
10621-601 VOA by GC ug/L	ug/L	EPA 601	-		07/02/98	JP	
Bromodichloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
Bromoform	ug/L	EPA 601	2.00	Not Det	07/02/98	JР	
Bromomethane	ug/L	EPA 601	4.00	Not Det	07/02/98	JP	
Carbon tetrachloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
Chlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP	
Chloroethane	ug/L	EPA 601	4.00	Not Det	07/02/98	JP	
2-Chloroethylvinyl ether	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
Chloroform	ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
Chloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JΡ	
Dibromochloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
1,2-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	15	
1,3-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JΡ	
1,4-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP	
Dichlorodifluoromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	æ	
1,1-Dichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
1,2-Dichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JΡ	
1,1-Dichloroethene	ug/L	EPA 601	2.00	Not Det	07/02/98	ΊP	
trans-1,2-Dichloroethene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
1,2-Dichloropropane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
cis-1,3-Dichloropropene	ug/L	EPA 601	2.00	Not Det	07/02/98	25	
trans-1,3-Dichloropropene	ng/L	EPA 601	2.00	Not Det	07/02/98	JP	
Methylene chloride	ug/L	EPA 601	4.00	Not Det	07/02/98	JР	
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
Tetrachloroethene	ug/L	EPA 601	2.00	278	07/02/98	JP	
1,1,1-Trichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	J₽	
1,1,2-Trichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	J₽	
Trichloroethene	ug/L	EPA 601	2.00	44.6	07/02/98	JP	
Trichlorofluoromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
Vinyl chloride	ug/L	EPA 601	4.00	Not Det	07/02/98	JP	
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	111	07/02/98	JP	
<i>1</i>							

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

GP-5

Time Sampled:

10:20

Lab ID:

06/27/98

AB51674

Log In Date: Log In Time:

13:26

Collector:

G. FISCHER

	Analysis					
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-601 VOA by GC ug/L	ug/L	EPA 601			07/02/98	JP
Bromodichloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JР
Bromoform	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Bromomethane	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
Carbon tetrachloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Chlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
Chloroethane	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Chloroform	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Dibromochloromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	J₽
1,3-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JΡ
1,4-Dichlorobenzene	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1-Dichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,2-Dichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1-Dichloroethene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
trans-1,2-Dichloroethene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,2-Dichloropropane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
cis-1,3-Dichloropropene	ng/L	EPA 601	2.00	Not Det	07/02/98	JP
trans-1,3-Dichloropropene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Methylene chloride	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Tetrachloroethene	ug/L	EPA 601	2.00	259	07/02/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Trichloroethene	ug/L	EPA 601	2.00	14.4	07/02/98	JP
Trichlorofluoromethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Vinyl chloride	ug/L	EPA 601	4.00	Not Det	07/02/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	126	07/02/98	JP

Signed:

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

Time Sampled:

10:50

GP-6

Lab ID:

AB51675

Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

13:26

ę	Analysis					
Parameter	Units	Method	Result	Date	Tech	
10621-601 VOA by GC ug/L	ug/L	EPA 601	_	•	07/02/98	JP
Bromodichloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Bromoform	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Bromomethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP .
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Chloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chloroform	ug/L	EPA 601	0.500	Not Det	07/02/98	JP
Chloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	æ
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JР
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Methylene chloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Tetrachloroethene	nd/F	EPA 601	1.00	Not Det	07/02/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Trichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JÞ
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	J.B
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	123	07/02/98	JP

Signed: _

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

GP-7

11:10

Lab ID:

AB51676

Time Sampled: Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

13:26

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Analysis

•	Test Information				Analysis	
Parameter	Units	Method	Rpt Lim	Result	Date	<u>Tech</u>
10621-601 VOA by GC ug/L	ug/L	EPA 601			07/02/98	JP
Bromodichloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JР
Bromoform	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Bromomethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	07/02/98	JР
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Chloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chloroform	ug/L	EPA 601	0.500	Not Det	07/02/98	JP
Chloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Methylene chloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Tetrachloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Trichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	128	07/02/98	JP

Signed: Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

--- Sample Information

Time Sampled:

11:50

Lab ID:

GP-8

AB51677

Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

13:26

	Test Information			Analysis		
Parameter	Units	Method	Rpt Lim	Result	Date	<u>Tech</u>
10621-601 VOA by GC ug/L	ug/L	EPA 601	-		07/02/98	JP
Bromodichloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	J₽
Bromoform	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Bromomethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Carbon tetrachloride	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	æ
Chloroethane	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
2-Chloroethylvinyl ether	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Chloroform	ug/L	EPA 601	0.500	Not Det	07/02/98	JP
Chloromethane ·	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Dibromochloromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,3-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,4-Dichlorobenzene	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
Dichlorodifluoromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JР
trans-1,2-Dichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,2-Dichloropropane	ug/L	EPA 601	1.00	Not Det	07/02/98	JÞ
cis-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
trans-1,3-Dichloropropene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Methylene chloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
1,1,2,2-Tetrachloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Tetrachloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1,1-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
1,1,2-Trichloroethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Trichloroethene	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Trichlorofluoromethane	ug/L	EPA 601	1.00	Not Det	07/02/98	JP
Vinyl chloride	ug/L	EPA 601	2.00	Not Det	07/02/98	JP
sur-1,4-Dichlorobutane %R 50-150	ug/L	EPA 601	0	128	07/02/98	JP

Signed: Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

TW-9

Time Sampled:

12:25

Lab ID:

AB51678

Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

13:26

 Test	Information	
エレジに	TITIOTITICATIOTI	

Analysis

Test Information				Anal	Analysis	
Units	Method	Rpt Lim	Result	Date	Tech	
ug/L	EPA 601			07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	0.500	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JР	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	J₽	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JP	
ug/L	EPA 601	1.00	Not Det	07/02/98	JР	
ug/L	EPA 601	2.00	Not Det	07/02/98	JP	
ug/L	EPA 601	0	125	07/02/98	JP	
	Units ug/L ug/L	Units Method ug/L EPA 601 ug/L EPA 601	Units Method Rpt Lim ug/L EPA 601 1.00 ug/L EPA 601 1.00 ug/L EPA 601 1.00 ug/L EPA 601 2.00 ug/L EPA 601 2.00 ug/L EPA 601 2.00 ug/L EPA 601 1.00 ug/L EPA 601 1.00 ug/L EPA 601 1.00 ug/L EPA 601 2.00 ug/L EPA 601 2.00 ug/L EPA 601 2.00 ug/L EPA 601 1.00 ug/L EPA 601 1.00	Units Method Rpt Lim Result ug/L EPA 601 ug/L EPA 601 1.00 Not Det ug/L EPA 601 1.00 Not Det ug/L EPA 601 1.00 Not Det ug/L EPA 601 2.00 Not Det ug/L EPA 601 1.00 Not Det ug/L EPA 601 2.00 Not Det ug/L EPA 601 1.00 Not Det	Units Method Rpt Lim Result Date ug/L EPA 601 07/02/98 ug/L EPA 601 1.00 Not Det 07/02/98 ug/L EPA 601 1.00 Not Det 07/02/98 ug/L EPA 601 2.00 Not Det 07/02/98 ug/L EPA 601 1.00 Not Det 07/02/98 ug/L EPA 601 0.500 Not Det 07/02/98 ug/L EPA 601 1.00 Not Det 07/02/98 ug/L EPA 601 1.00 Not Det 07/02/98 ug/L EPA 601 2.00 Not Det 07/02/98 ug/L EPA 601 2.00 Not Det 07/02/98 ug/L EPA 601 1.00 Not Det 07/02/98 <tr< td=""></tr<>	

Carl B. Causey

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

TW-10 2'-3'

Time Sampled:

13:05

Lab ID:

AB51679

Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

13:26

 Test	Inform	ation	

Analysis

	Test Information				Analysis		
Parameter	Units	Method	Rpt Lim	Result	Date	<u>Tech</u>	
10621-8010 Volatiles Soils ug/Kg	ug/Kg	SW8021B			07/01/98	JP	
Bromobenzene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Bromodichloromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Bromoform	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Bromomethane	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
Carbon tetrachloride	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Chlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
Chloroethane	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
2-Chloroethylvinyl ether	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Chloroform	ug/Kg	SW8021B	0.525	Not Det	07/01/98	JP	
1-Chlorohexane	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
Chloromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Dibromochloromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Dibromomethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,2-Dichlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
1,3-Dichlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
1,4-Dichlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
1,1-Dichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,2-Dichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,1-Dichloroethene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
trans-1,2-Dichloroethene	ug/Kg	SW8021B	1.05	4.16	07/01/98	JP	
cis-1,2-Dichloroethene	ng/Kg	SW8021B	1.05	98.6	07/01/98	JP	
1,2-Dichloropropane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
cis-1,3-Dichloropropene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
trans-1,3-Dichloropropene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Methylene chloride	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP	
1,1,1,2-Tetrachloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,1,2,2-Tetrachloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Tetrachloroethene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,1,1-Trichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,1,2-Trichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Trichloroethene	ug/Kg	SW8021B	1.05	8.70	07/01/98	JP	
Trichlorofluoromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
1,2,3-Trichloropropane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	
Vinyl chloride	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP	

LAW ENVIRONMENTAL NATIONAL LABORATORIES

TEST DATA REPORT

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 2

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/26/98

Station ID:

Time Sampled:

13:05

Lab ID:

TW-10 2'-3' AB51679

Log In Date:

06/27/98

Collector:

G. FISCHER

Log In Time:

--- Test Information ---

13:26

Parameter

Method Units

Result

Analysis Tech Date

sur-1,4-Dichlorobutane %R 50-150

ug/Kg

SW8021B

0

Rpt Lim

102

07/01/98

Remarks:

Signed:

Carl B. Causey

Technical Services Director

LAW ENVIRONMENTAL NATIONAL LABORATORIES TEST DATA REPORT

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 1

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/25/98

Station ID:

Time Sampled:

15:30

Lab ID:

DRUM COMPOSITE

06/27/98

AB51680

Log In Date: Log In Time:

13:26

Collector:

G. FISCHER

Test Information

Analycic

1	Test I	nformation			Anal	ysis
Parameter	Units	Method	Rpt Lim	Result	Date	Tech
10621-8010 Volatiles Soils ug/Kg	ug/Kg	SW8021B	-		07/01/98	JP
Bromobenzene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Bromodichloromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Bromoform	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Bromomethane	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP
Carbon tetrachloride	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Chlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	Ί₽
Chloroethane	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP
2-Chloroethylvinyl ether	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Chloroform	ug/Kg	SW8021B	0.525	Not Det	07/01/98	JP
1-Chlorohexane	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP
Chloromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Dibromochloromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Dibromomethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,2-Dichlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	J₽
1,3-Dichlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP
1,4-Dichlorobenzene	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP
1,1-Dichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,2-Dichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,1-Dichloroethene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
trans-1,2-Dichloroethene	ug/Kg	SW8021B	1.05	2.96	07/01/98	JP
cis-1,2-Dichloroethene	ug/Kg	SW8021B	1.05	70.3	07/01/98	JP
1,2-Dichloropropane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
cis-1,3-Dichloropropene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
trans-1,3-Dichloropropene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Methylene chloride	ug/Kg	SW8021B	2.10	Not Det	07/01/98	JP
1,1,1,2-Tetrachloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,1,2,2-Tetrachloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Tetrachloroethene	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,1,1-Trichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,1,2-Trichloroethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Trichloroethene	ug/Kg	SW8021B	1.05	22.4	07/01/98	JP
Trichlorofluoromethane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
1,2,3-Trichloropropane	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP
Vinyl chloride	ug/Kg	SW8021B	1.05	Not Det	07/01/98	JP

LAW ENVIRONMENTAL NATIONAL LABORATORIES

TEST DATA REPORT

07/07/98

--- Project Information ---

Mr. Jeff Tyburski

Page 2

LAW Eng. & Env. Svcs., Inc.

Project Name:

WILLCLEA

3301 Atlantic Avenue

Williamson 30741-8-2867.03.917

Raleigh, NC 27604

--- Sample Information ---

Date Sampled:

06/25/98

Station ID:

--- Sample Informatio

Time Sampled:

15:30

Lab ID:

DRUM COMPOSITE

Log In Date:

06/27/98

Collector:

AB51680 G. FISCHER

Log In Time:

13:26

--- Test Information ---

Analysis

Parameter	Units	Method	Rpt Lim	Result	Date	Tech
sur-1,4-Dichlorobutane %R 50-150	ug/Kg	SW8021B	0	99	07/01/98	JP

Remarks:

Signed:

Carl B. Causey

Technical Services Director

PROJECT NAME

SAMPLING DATE

TIME

0800

0905

1020

1050

110

225

1305

25 RELINGUISHED BY:

GRAB

SOURCE

CODE

LAW ENGINEERING & ENVIRONMENTAL SERVICES, INC. 3355 McLEMORE DRIVE PENSACOLA, FLORIDA 32514 (904) 857-0606

CHAIN DE CTISTOTE HANDO

CHA	IN OF COST	CDY HELUM	
VICES, INC. /E \32514	SAMPLING INFORMATION NPDES NUMBER	NAME OF FACILITY: STREET ADDRESS:	
JOB NO. 30741-8-2	CONTAINERS CONTAINERS (CONTAINERS (CONTAIN		de ted de la company de la com
SAMPLE STATION DESCRIPTION	in the state of th		10 (10 LENL LAB NO.) (10 10 LENL LAB NO.) (10 10 LENL LAB NO.)
5 P-1	22		AB51670
6 P-1 6 P-2 6 P-14 6 P-3	22		AB51671
P-14	72		AB51672
5/-3	22		AB51673
SP-4 SP-5	22		17B51674
6P.6	02		AB51675
P-7	22		A1351676
1-8	2		AB57677 AB51677
TW-9.	22		AB516 78 PB516 79 AB516 80
TW-10 2-3' IM Composite DITECTIME RECEIVED BY:	2 2	DATE / TIME RELINQUISHED BY:	RECEIVED BY LABORATORY: (N. Chodwict 40 7)

(SIGNATURE)

ISIGNA	TURE) AROBATORY.
DISTRIBUTION:	ORIGINAL AND YELLOW COPIES ACCOMPANY SAMPLE SHIPMENT TO LABORATORY. PINK COPY RETAINED BY SAMPLERS. YELLOW COPY RETAINED BY LABORATORY.
REMARKS	Shipped via fel. Ex

RECEIVED BY:

(SIGNATURE)

TW-10

Dium Composite

SOURCE CODES

(SIGNATURE)

RECOVERY WELL - RW RCRA MONITORING WELL - MW SOIL / SEDIMENT - SO SLUDGE - SL

NPDES DISCHARGE - ND DRINKING WATER - DW HAZARDOUS WASTE - HW SURFACE WATER - SW NON-AQUEOUS - NA

198 10:01)



Law Environmental, Inc. 7215 Pine Forest Road Pensacola, Florida 32526 904/944-9772

Analytical Request Form

To: LEN From: Low (Branch/C	Lateigh Company Name)	Attn: Sample Jeff Tug (Dep	Rece Lurshi t or Name	e i sing
Project Name: W	illiamson Cleaners	Project Number: 3		_
Sample ID	Analysis Requested	Detection Limits Req.	Sample Type	Method
69-1 69-14 69-3 69-4 69-5 69-5 69-5 1w-9 Tw-10 2'-3' 5>Drum Composite		SHO,	\$\frac{1}{50}\$	6230 D
Comments:		· · · · · · · · · · · · · · · · · · ·		



ARCADIS GERAGHTY&MILLER

COMPREHENSIVE SITE ASSESSMENT REPORT

APPENDIX C

Well Construction Records

DRILLING CONTRACTOR

Parratt Wolff

WELL CONSTRUCTION RECORD

1.	WELL USE (Check Applicable Box): Residential Municipal Recovery Heat Pump Water Injection Other	Industrial If Other, List Us	Agricultura e:	Monitoring X
2.	WELL LOCATION (Show sketch of the location below) Nearest Town: Wilson, NC County: Wilson	on		
3.	(Road, Community, or Subdivision and Lot No.) OWNER Koretizing of Wilson, Inc ADDRESS 1400 Ward Blvd.	<u>DEP</u> 7 From 0	<u>'H</u> To 1	DRILLING LOG Formation Description Asphalt and gravel
	(Street or Route No.)		8	Orange-brown to grey;
	Wilson NC 27893	 		Clayey silt to clayey sa
	City or Town State Zip Code			Wet.
4.	DATE DRILLED 9/2/99	8	10	Orange-brown to grey;
5.	TOTAL DEPTH 10			Very tight silty clay to
3.	CUTTINGS COLLECTED YES X NO DOCUMENT OF THE PROPERTY OF THE PR			clayey silt.
7. 3.	DOES WELL REPLACE EXISTING WELL? YES NO X STATIC WATER LEVEL Below Top of Casing: FT.			
٥.	(Use "+" if Above Top of Casing)			***************************************
€.	TOP OF CASING IS 0 FT. Above Land Surface*			
Ca	sing Terminated at/or below land surface is illegal unless a variance is issued			<u></u>
n ac	cordance with 15A NCAC 2C .0118			
	YIELD (gpm): N/A METHOD OF TEST N/A			
11.	WATER ZONES (depth): N/A			
10	CHLORINATION: Type N/A Amount N/A	tt ad	ditional annua in a	and dues best of forms
	CASING:	11 80	ullional space is n	eeded use back of form
	Wall Thickness		LOCATIO	N SKETCH
	Depth Diameter or Weight/Ft. Material	(Show direc		from at least two State Roads,
	From <u>0.0 To 5.0 Ft. 2 0.7lb/ft PVC</u>		or other map re	eference points)
	From To Ft.	MW-6		
	From To Ft.			
14.	GROUT:			1900
	From 0.0 To 1.0 Ft. Cement Tremie			5
	From 1.0 To 3.0 Ft. Bentonite Pour			
15.	SCREEN:			
	Depth Diameter Slot Size Material			
	From 5.0 To 10.0 Ft. 2 in. 0.01 in. PVC			
	From To Ft. in. in.		SITE CATION	
	From To Ft. in. in.			
16.	SAND/GRAVEL PACK:			
	Size Material			
	From To To Ft. Medium Sand Ft.			The same of the sa
17	REMARKS:	No. of the last	Titoming - 1	Red Riven /
	I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCO	ORDANCE WITH	5 NCAC 2C. W	/ELL
	CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD H.		•	
			••	· · · · · · · · · · · · · · · · ·
			_	12/19192

١.	WELL USE (Check Applicable Box): Residential Municipal Recovery Heat Pump Water Injection Other	IndustrialAgricultura	Monitoring X
2.	WELL LOCATION (Show sketch of the location below) Nearest Town: Wilson, NC County: Wilson	on	
3.	(Road, Community, or Subdivision and Lot No.) OWNER Koretizing of Wilson, Inc ADDRESS 1400 Ward Blvd. (Street or Route No.)	DEPTH To 1 1 8	DRILLING LOG Formation Descrption Asphalt and gravel Orange-brown to grey;
1. 5. 6.	Wilson NC 27893 City or Town State Zip Code DATE DRILLED 9/2/99 TOTAL DEPTH 10 CUTTINGS COLLECTED YES X NO DOES WELL REPLACE EXISTING WELL? YES NO X	8 10	Clayey silt to clayey sar Wet. Orange-brown to grey; Very tight silty clay to clayey silt.
n ac 10.	STATIC WATER LEVEL Below Top of Casing: (Use *+* if Above Top of Casing) TOP OF CASING IS 0 FT. Above Land Surface* sing Terminated at/or below land surface is illegal unless a variance is issued cordance with 15A NCAC 2C .0118 YIELD (gpm): N/A WATER ZONES (depth): N/A		
2.	CHLORINATION: Type N/A Amount N/A CASING:	If additional space is n	eeded use back of form
	Depth Diameter O.7 Diameter O.	(Show direction and distance	N SKETCH from at least two State Roads, eference points)
15.	From 0.0 To 1.0 Ft. Cement Tremie From 1.0 To 3.0 Ft. Bentonite Pour SCREEN: Depth Diameter Slot Size Material From 5.0 To 10.0 Ft. 2 in. 0.01 in. PVC From To Ft. in. in. in.	SITE	
	From To Ft. in. in. SAND/GRAVEL PACK: Size Material From 3.0 To 10.0 Ft. Medium Sand		Post rollen

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 1/98

Serial No:

	WELL USE (Check Applicable Box): Residential Municipal Recovery Heat Pump Water Injection Other	Industrial Agricultura If Other, List Use:	Al Monitoring X
2.	WELL LOCATION (Show sketch of the location below) Nearest Town: Wilson, NC County: Wilson	on	
3.	(Road, Community, or Subdivision and Lot No.) OWNER Koretizing of Wilson, Inc ADDRESS 1400 Ward Blvd.	DEPTH From To 0 1	DRILLING LOG Formation Descrptio Asphalt and gravel
	(Street or Route No.) Wilson NC 27893	8	Orange-brown to grey; Clayey silt to clayey sar
4. 5. 6. 7.	City or Town State Zip Code DATE DRILLED 9/2/99 TOTAL DEPTH 10 CUTTINGS COLLECTED YES X NO DOES WELL REPLACE EXISTING WELL? YES NO X STATIC WATER LEVEL Below Top of Casing: FT.	8 10	Wet. Orange-brown to grey; Very tight silty clay to clayey silt.
n ac 10. 11.	cordance with 15A NCAC 2C .0118 YIELD (gpm): N/A METHOD OF TEST N/A WATER ZONES (depth): N/A CHLORINATION: Type N/A Amount N/A	If additional space is n	leeded use back of form
	CASING:		N SKETCH
	From 0.0 To 5.0 Ft. 2 0.7lb/ft PVC From To Ft. Ft. PVC	•	from at least two State Roads, eference points)
14.	From To Ft. Material Method	Central VIII	
15.	From 0.0 To 1.0 Ft. Cement Tremie From 1.0 To 3.0 Ft. Bentonite Pour SCREEN:		
	From 5.0 To 10.0 Ft. 2 in. 0.01 in. PVC From To Ft. in. in. in. From To Ft. in. in.	SITE	
	SAND/GRAVEL PACK:		nove zees
16.	From 3.0 To 10.0 Ft. Medium Sand From To Ft.	一百九年	The state of the s

GW-1 REV. 1/98

DRILLING CONTRACTOR

Parratt Wolff

WELL CONSTRUCTION RECORD

	WELL USE (Check Applicable Box): Residential Municipal Recovery Heat Pump Water Injection Other	Industrial If Other, List	Agricultural	Monitoring X
2.	WELL LOCATION (Show sketch of the location below) Nearest Town: Wilson, NC County: Wilson	son		
	(Road, Community, or Subdivision and Lot No.)	DF	EPTH	DRILLING LOG
3.	OWNER Koretizing of Wilson, Inc	From	To	Formation Descrption
	ADDRESS 1400 Ward Blvd.	0	1	Asphalt and gravel
	(Street or Route No.)	1	8	Orange-brown to grey;
	Wilson NC 27893			Clayey silt to clayey san
	City or Town State Zip Code			Wet.
4.	DATE DRILLED 9/2/99	8	10	Orange-brown to grey;
5.	TOTAL DEPTH 10			Very tight silty clay to
6.	CUTTINGS COLLECTED YES X NO			clayey silt.
7.	DOES WELL REPLACE EXISTING WELL? YES NO X STATIC WATER LEVEL Below Top of Casing: FT.			
8.	STATIC WATER LEVEL Below Top of Casing: FT. (Use *+* if Above Top of Casing)			
9.	TOP OF CASING IS 0 FT. Above Land Surface*			
	sing Terminated at/or below land surface is illegal unless a variance is issued			
	cordance with 15A NCAC 2C .0118			
	YIELD (gpm): N/A METHOD OF TEST N/A			
	WATER ZONES (depth): N/A			
12.	CHLORINATION: Type N/A Amount N/A		If additional space is ne	eded use back of form
13.	CASING:			
	Wall Thickness		LOCATION	
	Depth Diameter or Weight/Ft. Material	(Show		rom at least two State Roads,
	From 0.0 To 5.0 Ft. 2 0.7lb/ft PVC	BANA/ O	or other map re	ference points)
	From To Ft.	MW-3	700 A 100 A	
4.4	FromToFt			
14.			Carlos	
	From 0.0 To 1.0 Ft. Cement Tremie			
	From 1.0 To 3.0 Ft. Bentonite Pour			
15	SCREEN:	2.57		
10.	Depth Diameter Slot Size Material			
	From 5.0 To 10.0 Ft. 2 in. 0.01 in. PVC		бітс	
	From To Ft. in. in.		LOCATION	
	From To Ft. in. in.			
16.	SAND/GRAVEL PACK:			
	Size Material			The Third
	From 3.0 To 10.0 Ft. Medium Sand			Para Paren
	From To Ft.			The state of the s
17.	REMARKS:	[C-000]		1 3, 7, 12 / 1
			*	
	I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACC	ORDANCE WI	TH 15 NCAC 2C, W	ELL
	CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD H	IAS BEEN PRO	OVIDED TO THE WI	ELL OWNER.
	FOR OFFICE USE ONLY			12/19/99

1.	WELL USE (Check Applicable Box): Residential Municipal Recovery Heat Pump Water Injection Other	Industrial	Agricultura	l Monitoring X
2.	WELL LOCATION (Show sketch of the location below)			
٠.	Nearest Town: Wilson, NC County: Wilson	son		
	(Road, Community, or Subdivision and Lot No.)	DEF		DRILLING LOG
3.	OWNER Koretizing of Wilson, Inc ADDRESS 1400 Ward Blvd.	From 0	To 1	Formation Descrptio
	(Street or Route No.)		8	Asphalt and gravel Orange-brown to grey;
	Wilson NC 27893	•		Clayey silt to clayey sar
	City or Town State Zip Code		* * * * * * * * * * * * * * * * * * * *	Wet.
4.	DATE DRILLED 9/2/99	8	15	Orange-brown to grey;
5.	TOTAL DEPTH 18			Very tight silty clay to
6.	CUTTINGS COLLECTED YES X NO			clayey silt.
7.	DOES WELL REPLACE EXISTING WELL? YES NO X STATIC WATER LEVEL Below Top of Casing: FT.	15	18	Grey to brown; sandy
8.	STATIC WATER LEVEL Below Top of Casing: FT. (Use *+* if Above Top of Casing)			silt to coarse silty sand
9.	TOP OF CASING IS 0 FT. Above Land Surface*			
	sing Terminated at/or below land surface is illegal unless a variance is issued			
	cordance with 15A NCAC 2C .0118			
10.	YIELD (gpm): N/A METHOD OF TEST N/A			
11.	WATER ZONES (depth): N/A			
10	CHI ORINATION: Tuno N/A Amount N/A	16	additional cases is a	anded use back of form
	CHLORINATION: Type N/A Amount N/A	lf .	additional space is n	eeded use back of form
	CHLORINATION: Type N/A Amount N/A CASING: Wall Thickness	If		
	CASING:		LOCATIO	eeded use back of form N SKETCH from at least two State Roads,
	CASING: Wall Thickness	(Show di	LOCATION rection and distance	N SKETCH
	CASING: Depth Diameter or Weight/Ft. Material		LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	Depth Diameter O.7 Diameter O.	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	CASING: Depth Diameter O.7 Diam	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	CASING: Depth Diameter O.7 Diam	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	CASING: Depth Diameter O.7 Diam	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	CASING: Depth Diameter O.7 Diam	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	CASING: Depth Diameter O.7 Diameter Diameter O.7 Diameter O.7 Diameter O.7 Diameter	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13.	Depth	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13.	Depth	(Show di	LOCATION rection and distance	N SKETCH from at least two State Roads,
13. 14.	Depth	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13. 14.	Depth Diameter O.7 Diameter O.	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13. 14.	Depth Diameter O.7 Diameter O.	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13. 14.	Depth	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13. 14. 15.	Depth	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13. 14. 15.	Depth	(Show di	LOCATION rection and distance or other map re	N SKETCH from at least two State Roads,
13. 14. 15.	Depth	MW-2 ft bls.	LOCATION rection and distance or other map rection and distance or other m	N SKETCH from at least two State Roads, eference points)
13. 14. 15.	Depth Diameter O.7 Diameter O.	ft bls.	LOCATION rection and distance or other map rection and distance or other m	N SKETCH from at least two State Roads, eference points)
13. 14. 15.	Depth	ft bls.	LOCATION rection and distance or other map rection and distance or other m	N SKETCH from at least two State Roads, eference points)

DRILLING CONTRACTOR

Parratt Wolff

WELL CONSTRUCTION RECORD

	Recovery Heat Pump Water Injection Other	If Other, List Use	:	
2.	WELL LOCATION (Show sketch of the location below) Nearest Town: Wilson, NC County: Wilson	on		
	(Road, Community, or Subdivision and Lot No.) OWNER Koretizing of Wilson, Inc	<u>DEPTI</u> From	<u>†</u> . To	DRILLING LOG Formation Descrption
	ADDRESS 1400 Ward Blvd.	0	1	Asphalt and gravel
	(Street or Route No.)	1	8	Orange-brown to grey;
	Wilson NC 27893			Clayey silt to clayey sand
	City or Town State Zip Code	8	15	Wet.
	DATE DRILLED 9/2&9/3/99 TOTAL DEPTH 31	-	15	Orange-brown to grey; Very tight silty clay to
	CUTTINGS COLLECTED YES X NO			clayey silt.
	DOES WELL REPLACE EXISTING WELL? YES NO X	15	31	Grey to brown; sandy
	STATIC WATER LEVEL Below Top of Casing: FT.	<u> </u>		silt to coarse silty sand.
	(Use "+" if Above Top of Casing)			
9.	TOP OF CASING IS FT. Above Land Surface*			
Cas	sing Terminated at/or below land surface is illegal unless a variance is issued			
	cordance with 15A NCAC 2C .0118			
	YIELD (gpm): N/A METHOD OF TEST N/A			
11.	WATER ZONES (depth): N/A			
12.	CHLORINATION: Type N/A Amount N/A	If add	tional space is ne	eeded use back of form
	CASING:			<u> </u>
	Wall Thickness		LOCATION	<u> I SKETCH</u>
	Depth Diameter or Weight/Ft. Material	(Show direct	on and distance f	rom at least two State Roads,
	From 0.0 To 12.0 Ft. 6 Steel		or other map re	ference points)
	From 0.0 To 21.0 Ft. 2 0.7lb/ft PVC	MW-1		
	From To Ft.		A Coming	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
14.	GROUT:			
	From 0.0 To 17.0 Ft. Cement Tremie			
	From 17.0 To 19.0 Ft. Bentonite Pour			
15	SCREEN:		.	
	Depth Diameter Slot Size Material	[\$71.3384]		
	From 21.0 To 31.0 Ft. 2 in. 0.01 in. PVC	<u> </u>	ITE -	
	From To Ft. in. in.	Loc Loc	KOITA	
	From To Ft. in. in.		1	
16.	SAND/GRAVEL PACK:			11.00
	Size Material			
	From 19.0 To 31.0 Ft. Medium Sand			A CONTRACTOR OF THE PARTY OF TH
	From To Ft.	MAN OF THE	- 1/1-1/1	Jake Marie
17.	REMARKS: Type III Monitoring Well			
	LDO LIEDERY CERTIEVITHAT THE WELL WAS CONCERNICED IN ACCO	ODDANCE WITH H	E NOAC OC M	~·
	I DO HERBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCOUNT THE PECOPOLIS			
	CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD H	AS BEEN PROVIDE	ED TO THE MI	ELL OWNER.

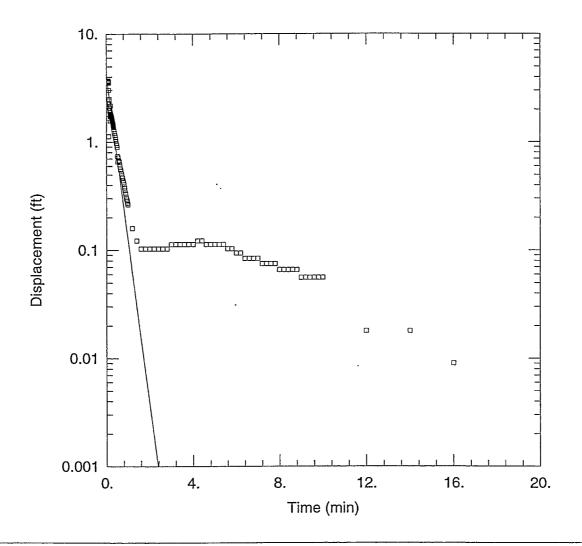


ARCADIS GERAGHTY&MILLER

COMPREHENSIVE SITE ASSESSMENT REPORT

APPENDIX D

In-Situ Aquifer Test Results



Data Set: G:\G&M\APROJECT\ECSClaims\WILSON\Discount\Report\Slug Test Data\MW-1in.aqt

Date: 12/19/99 Time: 16:54:55

PROJECT INFORMATION

Company: ARCADIS Geraghty & Miller

Client: Discount Cleaners Project: NC000589.0001

Test Location: Wilson, North Carolina

Test Well: MW-1
Test Date: 12/7/99

AQUIFER DATA

Saturated Thickness: 16. ft Anisotropy Ratio (Kz/Kr): 1.

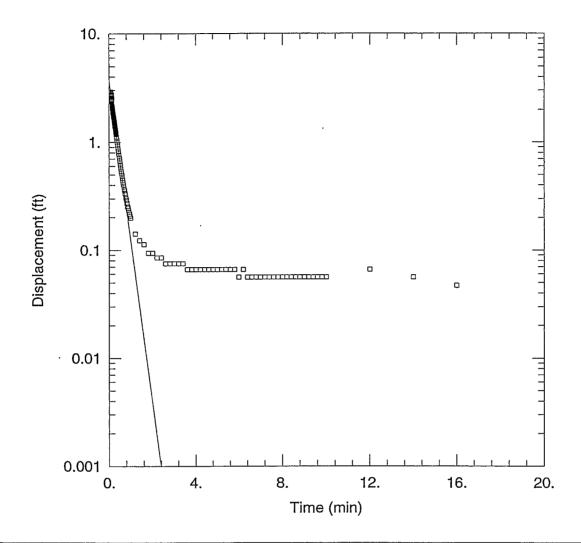
WELL DATA (MW-1:Slug in)

Initial Displacement: 3.71 ft Water Column Height: 24.17 ft Casing Radius: 0.167 ft Wellbore Radius: 0.667 ft Screen Length: 10. ft Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02433 cm/sec y0 = 4.048 ft



Data Set: G:\G&M\APROJECT\ECSClaims\WILSON\Discount\Report\Slug Test Data\MW-1out.aqt

Date: 12/19/99 Time: 16:54:47

PROJECT INFORMATION

Company: ARCADIS Geraghty & Miller

Client: Discount Cleaners
Project: NC000589,0001

Test Location: Wilson, North Carolina

Test Well: MW-1 Test Date: 12/7/99

AQUIFER DATA

Saturated Thickness: 16. ft Anisotropy Ratio (Kz/Kr): 1.

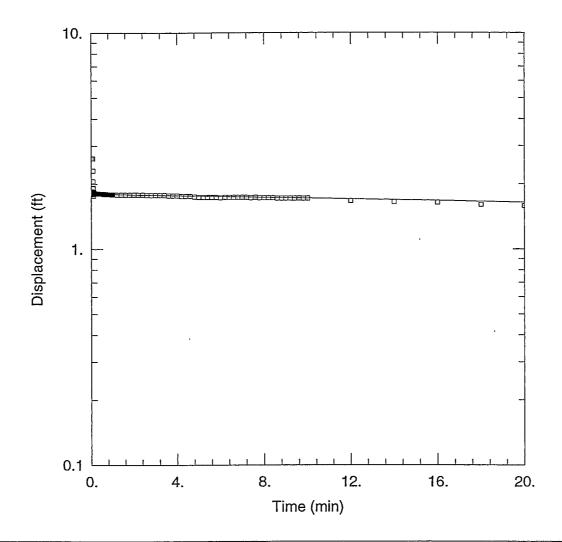
WELL DATA (MW-1:out)

Initial Displacement: 2.917 ft
Casing Radius: 0.167 ft
Screen Length: 10. ft
Water Column Height: 24.17 ft
Wellbore Radius: 0.667 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02388 cm/sec y0 = 3.675 ft



Data Set: G:\G&M\APROJECT\ECSClaims\WILSON\Discount\Report\Slug Test Data\MW-2in.aqt

Date: 12/19/99 Time: 16:54:28

PROJECT INFORMATION

Company: ARCADIS Geraghty & Miller

Client: Discount Cleaners
Project: NC000589.0001

Test Location: Wilson, North Carolina
Test Well: MW-2

Test Well: <u>MW-2</u> Test Date: <u>12/7/99</u>

AQUIFER DATA

Saturated Thickness: 5.4 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2:Slug in)

Initial Displacement: 2.624 ft Casing Radius: 0.167 ft Screen Length: 5. ft

Water Column Height: 5.4 ft Wellbore Radius: 0.667 ft Gravel Pack Porosity: 0.2

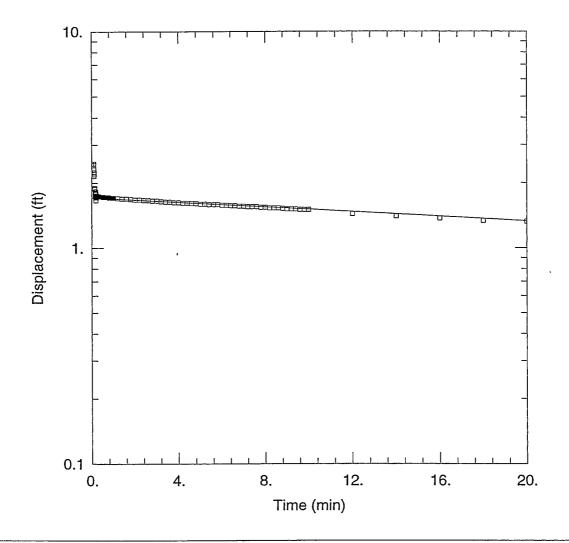
SOLUTION

Aquifer Model: Unconfined

K = 3.762E-05 cm/sec

Solution Method: Bouwer-Rice

y0 = 1.801 ft



Data Set: G:\G&M\APROJECT\ECSClaims\WILSON\Discount\Report\Slug Test Data\MW-6in.aqt

Date: 12/19/99 Time: 16:54:06

PROJECT INFORMATION

Company: ARCADIS Geraghty & Miller

Client: Discount Cleaners Project: NC000589.0001

Test Location: Wilson, North Carolina

Test Well: MW-6 Test Date: 12/7/99

AQUIFER DATA

Anisotropy Ratio (Kz/Kr): 1. Saturated Thickness: 5.46 ft

WELL DATA (MW-6:Slug in)

Initial Displacement: 2.454 ft Casing Radius: 0.167 ft Screen Length: 5. ft

Water Column Height: 5.46 ft Wellbore Radius: 0.667 ft Gravel Pack Porosity: 0.2

Solution Method: Bouwer-Rice

SOLUTION

Aquifer Model: Unconfined

K = 0.0001061 cm/secy0 = 1.711 ft



ARCADIS GERAGHTY&MILLER

COMPREHENSIVE SITE ASSESSMENT REPORT

APPENDIX E

Laboratory Analytical Data Reports

> Tel: 704-875-9092 Fax: 704-875-9091

September 23, 1999

Mr. Matt Hudson ARCADIS Geraghty & Miller . P.O. Box 31388 2301 Rexwoods Dr. Raleigh, NC 27607

RE: Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Dear Mr. Hudson:

Enclosed are the results of analyses for sample(s) received by the laboratory on September 10, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sherri Howard Project Manager

Enclosures

Pace Analytical

Pace Analytical Services, Inc. 9800 Kincey Avenue, Suite 100 Huntersville, NC 28078

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99

PAGE: 1

ARCADIS Geraghty & Miller P.O. Box 31388 2301 Rexwoods Dr. Raleigh. NC 27607 Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Attn: Mr. Matt Hudson Phone: (919)782-5511

Solid results are reported on a dry weight basis

Pace Sample No: 92 Client Sample ID: MW	623719 -1			Date Collect Date Recei)/09/99)/10/99		Matrix: Wa	ater
Parameters		Results	Units	PRL	App. DF	Analyzed	Analys	t CAS#	Footnotes
GC Volatiles		•••••	•••••		******		••••	*********	••••
GC VOCs in Water		Method	i: SM 6230D			Prep Meth	nod: SM (6230D	
Dichlorodifluorometha	ne	ND	ug/1	0.5	1.00	09/17/99	KST	75-71-8	
Chloromethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-87-3	
Vinyl Chloride		ND	ug/l	0.5	1.00	09/17/99	KST	75-01-4	
Bromomethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-83-9	
Chloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	75-00-3	
Trichlorofluoromethan	e	ND	ug/l	0.5	1.00	09/17/99	KST	75-69-4	
1,1-Dichloroethene		ND	ug/l	0.5	1.00	09/17/99	KST	75-35-4	
Methylene Chloride		9.2	ug/l	0.5	1.00	09/17/99	KST	75-09-2	1
trans-1,2-Dichloroeth	ene .	ND	ug/l	0.5	1.00	09/17/99	KST	156-60-5	
1,1-Dichloroethane	.,	ND	ug/l	0.5	1.00	09/17/99	KST	75-34-3	
cis-1,2-Dichloroethen	e	ND	ug/l	0.5	1.00	09/17/99	KST	156-59-2	
Bromochloromethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-97-5	•
Chloroform		5.0	ug/l	0.5	1.00	09/17/99	KST	67-66-3	
2,2-Dichloropropane		ND	ug/l	0.5	1.00	09/17/99	KST	594-20-7	
1.2-Dichloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	107-06-2	
1.1.1-Trichloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	71-55-6	
1.1.Dichloropropene		ND	ug/l	0.5	1.00	09/17/99	KST	563-58-6	
Carbon Tetrachloride		ND	ug/l	0.5	1.00	09/17/99	KST	56-23-5	
Dibromomethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-95-3	
1.2-Dichloropropane		ND	ug/l	0.5	1.00	09/17/99	KST	78-87-5	
Trichloroethene		ND	ug/l	0.5	1.00	09/17/99	KST	79-01-6	
Bromodichloromethane		1.2	ug/l	0.5	1.00	09/17/99	KST	75-27-4	
cis-1,3-Dichloroprope		ND	ug/1	0.5	1.00	09/17/99	KST	10061-01-5	
trans-1,3-Dichloropro	pene	ND	ug/l	0.5	1.00	09/17/99	KST	10061-02-6	
1.1.2-Trichloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	79-00-5	
1.3.Dichloropropane		ND	ug/l	0.5	1.00	09/17/99	KST	142-28-9	

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

REPORT OF LABORATORY ANALYSIS

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 2

Pace Project Number: 928662

Pace Sample No: 92623719 Client Sample ID: MW-1			Date Colle Date Rece		9/09/99 9/10/99		Matrix: W	ater
Parameters	Results .	Units	PRL	App. DF	Analyzed	•	t CAS#	Footnotes
Dibromochloromethane	ND	ug/1	0.5	1.00	09/17/99	KST	124-48-1	
1,2.Dibromoethane	ND	ug/l	0.5	1.00	09/17/99	KST	106-93-4	
Tetrachloroethene	ND .	ug/l	0.5	1.00	09/17/99	KST	127-18-4	
1,1,1,2-Tetrachloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	630-20-6	
Chlorobenzene	ND	ug/1	0.5	1.00	09/17/99	KST	108-90-7	·
Bromoform	ND	ug/l	0.5	1.00	09/17/99	KST	75-25-2	
1,1,2,2-Tetrachloroethane	ND	ug/1	0.5	1.00	09/17/99	KST	79-34-5	
1,2,3-Trichloropropane	ND	ug/1	0.5	1.00	09/17/99	KST	96-18-4	
Bromobenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-86-1	
2-Chlorotoluene	ND	ug/l	0.5	1.00	09/17/99	KST	95-49-8	
4-Chlorotoluene	ND	ug/l	0.5	1.00	09/17/99	KST	106-43-4	
1.3-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	541-73-1	
1.4-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	106-46-7	
1,2-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST-	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/l	2	1.00	09/17/99	KST	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/l	2	1.00	09/17/99	KST	120-82-1	
Hexachlorobutadiene	ND	ug/l	2	1.00	09/17/99	KST	87-68-3	
1,2,3-Trichlorobenzene	ND .	ug/1	2	1.00	09/17/99	KST	87-61-6	
Methyl-tert-butyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	1634-04-4	
Isopropyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	108-20-3	
Benzene	ND	ug/l	0.5	1.00	09/17/99		71-43-2	
Toluene	ND	ug/l	0.5	1.00	09/17/99	KST	108-88-3	
Ethylbenzene	ND	ug/1	0.5	1.00	09/17/99	KST	100-41-4	
m&p-Xylene	ND	ug/l	0.5	1.00	09/17/99		7816-60-0	
Styrene	ND	ug/l	0.5	1.00	09/17/99		100-42-5	
o-Xylene (1.2-Dimethylbenzene)		ug/l	0.5	1.00	09/17/99	KST	95-47-6	
Isopropylbenzene (Cumene)	ND	ug/l	0.5	1.00	09/17/99	KST	98-82-8	
n-Propylbenzene	ND	ug/l	0.5	1.00	09/17/99		103-65-1	
1.3.5-Trimethylbenzene	ND	ug/l	0.5	1.00	09/17/99		108-67-8	
tert-Butylbenzene	ND	ug/1	0.5	1.00	09/17/99		98-06-6	
1,2,4-Trimethylbenzene	ND	ug/1	0.5	1.00	09/17/99		95-63-6	
sec-Butylbenzene	ND	ug/1	0.5	1.00	09/17/99		135-98-8	
p-Isopropyltoluene	ND	ug/1	1	1.00	09/17/99		99-87-6	
n-Butylbenzene	ND	ug/1	1	1.00	09/17/99		104-51-8	
Naphthalene	ND	ug/l	2	1.00	09/17/99	KST	91-20-3	
1-Chloro-3-fluorobenzene (S)	110	λ 1	_	1.00	09/17/99	KST	625-98-9	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99

PAGE: 3

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: 92623727 Client Sample ID: MW-2					9/09/99 9/10/99		Matrix: W	ater	
Parameters	Results	Units	PRL	App. DF	Analyzed	Analys	st CAS#	Footnotes	
GC Volatiles									
GC VOCs in Water	Meth	od: SM 62300)		Prep Meth	od: SM	6230D		
Dichlorodifluoromethane	ND	ug/l	0.5	1.00	09/22/99	KST	75-71-8		•
Chloromethane	ND.	ug/l	0.5	1.00	09/22/99	KST	74-87-3		
Vinyl Chloride	ND	ug/l	0.5	1.00	09/22/99	KST	75-01-4		
Bromomethane	ND	ug/l	0.5	1.00	09/22/99	KST	74-83-9		
Chloroethane	ND	ug/l	0.5	1.00	09/22/99	KST	75-00-3		
Trichlorofluoromethane	ND	ug/l	0.5	1.00	09/22/99	KST	75-69-4		
1,1-Dichloroethene	ND	ug/l	. 0.5	1.00	09/22/99	KST	75-35-4		
Methylene Chloride	ND	ug/l	0.5	1.00	09/22/99	KST	75-09-2		
trans-1,2-Dichloroethene	ND	ug/l	0.5	1.00	09/22/99	KST	156-60-5		
1.1-Dichloroethane	ND	ug/l	0.5	1.00	09/22/99	KST .	75-34-3		
cis-1,2-Dichloroethene	ND	ug/l	0.5	1.00	09/22/99	KST	156-59-2		
Bromochloromethane	ND	ug/l	0.5	1.00	09/22/99	KST	74-97-5		
Chloroform	11 -	ug/l	0.5	1.00	09/22/99	KST	67-66-3		
2.2-Dichloropropane	ND	ug/l	0.5	1.00	09/22/99	KST	594-20-7		
1,2-Dichloroethane	ND	ug/l	0.5	1.00	09/22/99	KST	107-06-2		
1.1.1-Trichloroethane	ND	ug/l	0.5	1.00	09/22/99	KST	71-55-6		
1,1-Dichloropropene	ND	ug/l	0.5	1.00	09/22/99	KST	563-58-6		
Carbon Tetrachloride	ND	ug/l	0.5	1.00	09/22/99	KST	56-23-5		
Dibromomethane	ND	ug/l	0.5	1.00	09/22/99	KST	74-95-3		
1,2-Dichloropropane	" ND	ug/l	0.5	1.00	09/22/99	KST	78-87-5		
Trichloroethene	ND	ug/l	0.5	1.00	09/22/99	KST	79-01-6		
Bromodichloromethane	2.3	ug/l	0.5	1.00	09/22/99	KST	75-27-4		
cis-1.3-Dichloropropene	ND	ug/l	0.5	1.00	09/22/99	KST	10061-01-5		
trans-1.3-Dichloropropene	ND	ug/l	0.5	1.00	09/22/99	KST	10061-02-6		
1,1.2-Trichloroethane	ND	ug/l	0.5	1.00	09/22/99	KST	79-00-5		
1,3-Dichloropropane	ND	ug/l	0.5	1.00	09/22/99	KST	142-28-9		
Dibromochloromethane	ND	ug/l	0.5	1.00	09/22/99	KST	124-48-1		
1,2-Dibromoethane	ND	ug/l	0.5	1.00	09/22/99	KST	106-93-4		
Tetrachloroethene	ND	ug/l	0.5	1.00	09/22/99	KST	127-18-4		
1.1.1.2-Tetrachloroethane	ND	ug/l	0.5	1.00	09/22/99	KST	630-20-6		
Chlorobenzene	ND	ug/l	0.5	1.00	09/22/99	KST	108-90-7		
Bromoform	ND	ug/l	0.5	1.00	09/22/99	KST	75-25-2		
1.1.2.2-Tetrachloroethane	ND	ug/l	0.5	1.00	09/22/99	KST	79-34-5		
1,2,3-Trichloropropane	ND	ug/l	0.5	1.00	09/22/99	KST	96-18-4		
Bromobenzene	ND	ug/1	0.5	1.00	09/22/99	KST	108-86-1		

Laboratory Certification IDs NC Wastewater NC Drinking Water 37706 SC 99006 ND

ug/1

2-Chlorotoluene

1.00

09/22/99 KST

0.5

95-49-8

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99

PAGE: 4

Pace Project Number: 928662

Pace Sample No: 92623727 Client Sample ID: MW-2					9/09/99 9/10/99		Matrix: W	ater
Parameters	Results	Units	PRL	App. DF	Analyzed	Analy	st CAS#	Footnotes
4-Chlorotoluene	ND	ug/1	0.5	1.00	09/22/99	KST	106-43-4	•••••
1.3-Dichlorobenzene	ND	ug/l	1	1.00	09/22/99	KST	541-73-1	
1,4-Dichlorobenzene	ND	ug/l	1	1.00	09/22/99	KST	106-46-7	
1,2-Dichlorobenzene	ND	ug/1	1	1.00	09/22/99	KST	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/l	2	1.00	09/22/99	KST	96-12-8	
1.2.4-Trichlorobenzene	ND	ug/l	2	1.00	09/22/99	KST	120-82-1	
Hexachlorobutadiene	ND	ug/l	2	1.00	09/22/99	KST	87-68-3	
1,2,3-Trichlorobenzene	ND	ug/l	2	1.00	09/22/99	KST	87-61-6	
Methyl·tert-butyl Ether	ND	ug/1	0.5	1.00	09/22/99	KST	1634-04-4	
Isopropyl Ether	ND	ug/l	0.5	1.00	09/22/99	KST	108-20-3	
Benzene	ND	ug/l	0.5	1.00	09/22/99	KST	71-43-2	
Toluene	ND	ug/1	0.5	1.00	09/22/99	KST	108-88-3	
Ethylbenzene	ND	ug/1	0.5	1.00	09/22/99	KST	100-41-4	
m&p-Xylene	ND	ug/l	0.5	1.00	09/22/99	KST	7816-60-0	
Styrene	ND	ug/l	0.5	1.00	09/22/99	KST	100-42-5	
o-Xylene (1,2-Dimethylbenzene)	ND	ug/l	0.5	1.00	09/22/99	KST	95-47-6	
Isopropylbenzene (Cumene)	ND	ug/l	0.5	1.00	09/22/99	KST	98-82-8	
n-Propylbenzene	ND	ug/l	0.5	1.00	09/22/99	KST	103-65-1	
1.3.5-Trimethylbenzene	ND	ug/l	0.5	1.00	09/22/99	KST	108-67-8	
tert-Butylbenzene	ND	ug/l	0.5	1.00	09/22/99	KST	98-06-6	
1.2.4-Trimethylbenzene	ND	ug/l	0.5	1.00	09/22/99	KST	95-63-6	
sec-Butylbenzene	ND	ug/l	0.5	1.00	09/22/99	KST	135-98-8	
p-Isopropyltoluene .	ND	ug/l	1	1.00	09/22/99	KST	99-87-6	
n-Butylbenzene	ND	ug/l	1	1.00	09/22/99	KST	104-51-8	
Naphthalene	3.6	ug/1	2	1.00	09/22/99	KST	91-20-3	
1-Chloro-3-fluorobenzene (S)	103	*		1.00	09/22/99	KST	625-98-9	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 13

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: Client Sample ID:	92623776 MW-3					9/09/99 9/10/99		Matrix: W	ater
Parameters		Results	Units	PRL	App. DF	Analyzed	Analys	st CAS#	Footnotes
C Volatiles									
GC VOCs in Water		Meth	od: SM 6230D			Prep Meth	od: SM	6230D	
Dichlorodifluoromet	hane	ND	ug/1	0.5	1.00	09/17/99	KST	75-71-8	
Chloromethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-87-3	
Vinyl Chloride		ND	ug/l	0.5	1.00	09/17/99	KST	75-01-4	
Bromomethane		ND	ug/1	0.5	1.00	09/17/99	KST	74-83-9	
Chloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	75-00-3	
Trichlorofluorometh	nane	ND	ug/l	0.5	1.00	09/17/99	KST	75-69-4	
1,1-Dichloroethene		ND	ug/l	0.5	1.00	09/17/99	KST	75-35-4	
Methylene Chloride		2.0	ug/l	0.5	1.00	09/17/99	KST	75-09-2	. 1
trans-1,2-Dichloroe	ethene	ND -	ug/l	0.5	1.00	09/17/99	KST	156-60-5	
1,1-Dichloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	75-34-3	
cis-1,2-Dichloroeth	nene	3.0	ug/l	0.5	1.00	09/17/99	KST	156-59-2	
Bromochloromethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-97-5	
Chloroform		2.3	ug/l	0.5	1.00	09/17/99	KST	67-66-3	
2,2-Dichloropropane	3	ND	ug/l	0.5	1.00	09/17/99	KST	594-20-7	
1,2-Dichloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	107-06-2	
1.1.1-Trichloroetha	ane	ND	ug/l	0.5	1.00	09/17/99	KST	71-55-6	
1.1-Dichloropropens	9	ND	ug/l	0.5	1.00	09/17/99	KST	563-58-6	
Carbon Tetrachlorio	ie	ND	ug/l	0.5	1.00	09/17/99	KST	56-23-5	
Dibromomethane		ND	ug/l	0.5	1.00	09/17/99	KST	74-95-3	
1,2-Dichloropropane	•	ND	ug/l	0.5	1.00	09/17/99	KST	78-87-5	
Trichloroethene		ND	ug/l	0.5	1.00	09/17/99	KST	79-01-6	
Bromodichloromethar	ne	ND	ug/l	0.5	1.00	09/17/99	KST	75-27-4	
cis-1,3-Dichloropro	pene	ND	ug/l	0.5	1.00	09/17/99	KST	10061-01-5	
trans-1,3-Dichlorog	ropene	ND	ug/l	0.5	1.00	09/17/99	KST	10061-02-6	
1,1,2-Trichloroetha	ane	ND	ug/l	0.5	1.00	09/17/99	KST ·	79-00-5	
1.3-Dichloropropane	<u> </u>	ND	ug/l	0.5	1.00	09/17/99	KST	142-28-9	
Dibromochloromethar	ne	ND	ug/l	0.5	1.00	09/17/99	KST	124-48-1	
1,2-Dibromoethane		ND	ug/l	0.5	1.00	09/17/99	KST	106-93-4	
Tetrachloroethene		1.4	ug/l	0.5	1.00	09/17/99	KST	127-18-4	
1.1.1.2-Tetrachloro	ethane	ND	ug/l	0.5	1.00	09/17/99	KST	630-20-6	
Chlorobenzene		ND	ug/l	0.5	1.00	09/17/99	KST	108-90-7	
Bromoform		ND	ug/l	0.5	1.00	09/17/99	KST	75-25-2	
1.1.2.2.Tetrachloro	ethane	ND	ug/l	0.5	1.00	09/17/99	KST	79-34-5	
1.2.3.Trichloroprop	oane	ND	ug/l	0.5	1.00	09/17/99	KST	96-18-4	
Bromobenzene		ND	ug/l	0.5	1.00	09/17/99	KST	108-86-1	
2-Chlorotoluene		ND	ug/l	0.5	1.00	09/17/99	KST	95-49-8	

Laboratory Certification IDs NC Wastewater 12 NC Drinking Water 37706 SC 99006

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DATE: 09/23/99 PAGE: 14

Pace Project Number: 928662

Pace Sample No: 92623776 Client Sample ID: MW-3			Date Collect Date Rece		09/09/99 09/10/99		Matrix:	Water
Parameters	Results	Units	PRL	App. DI	F Analyzed	Analyst	: CAS#	Footnotes
4-Chlorotoluene	ND	ug/l	0.5	1.00	09/17/99	KST	106-43-4	
1,3-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	541-73-1	
1,4-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	106-46-7	
1,2-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/l	2	1.00	09/17/99	KST	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/1	2	1.00	09/17/99	KST	120-82-1	
Hexachlorobutadiene	ND	ug/l	2	1.00	09/17/99	KST	87-68-3	
1,2,3·Trichlorobenzene	ND	ug/l	2	1.00	09/17/99	KST	87-61-6	
Methyl·tert-butyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST .	1634-04-4	
Isopropyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	108-20-3	
Benzene	ND	ug/1	0.5	1.00	. 09/17/99	KST	71-43-2	
Toluene	ND	ug/l	0.5	1.00	09/17/99	KST	108-88-3	
Ethy1benzene	ND	ug/l	0.5	1.00	09/17/99	KST	100-41-4	
m&p-Xylene	ND	ug/1	0.5	1.00	09/17/99	KST	7816-60-0	
Styrene	ND	ug/l	0.5	1.00	09/17/99	KST	100-42-5	
o-Xylene (1.2-Dimethylbenzene)	ND	ug/l	0.5	1.00	09/17/99	KST	95-47-6	
Isopropylbenzene (Cumene)	ND	ug/l	0.5	1.00	09/17/99	KST	98-82-8	
n-Propylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	103-65-1	
1.3.5-Trimethylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-67-8	
tert-Butylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	98-06-6	
1,2,4-Trimethylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	95-63-6	
sec-Butylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	135-98-8	
p-Isopropyltoluene .	ND	ug/l	1	1.00	09/17/99	KST	99-87-6	
n-Butylbenzene	ND	ug/1	1	1.00	09/17/99	KST	104-51-8	
Naphthalene	ND	ug/l	2	1.00	09/17/99	KST	91-20-3	
1-Chloro-3-fluorobenzene (S)	111	X		1.00	09/17/99	KST	625-98-9	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 11

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: 92623768 Client Sample ID: MW-4			Date Co Date R		9/09/99 9/10/99	Matrix: Water			
Parameters 	Results	Units	PRL	App. DF	Analyzed	Analyst	t CAS#	Footnotes	
GC Volatiles									
GC VOCs in Water	Meth	od: SM 6230D)		Prep Meth	od: SM 6	5230D		
Dichlorodifluoromethane	ND	ug/l	0.5	1.00	09/20/99	KST	75-71-8		
Chloromethane	ND	ug/l	0.5	1.00	09/20/99	KST	74-87-3		
Vinyl Chloride	ND	ug/l	0.5	1.00	09/20/99	KST	75-01-4		
Bromomethane	ND	ug/l	0.5	1.00	09/20/99	KST	74-83-9		
Chloroethane	ND	ug/l	0.5	1.00	09/20/99	KST	75-00-3		
Trichlorofluoromethane	ND	ug/l	0.5	1.00	09/20/99	KST	75-69-4		
1.1-Dichloroethene	ND	ug/l	0.5	1.00	09/20/99	KST	75-35-4		
Methylene Chloride	9.6	ug/l	0.5	1.00	09/20/99	KST	75-09-2	1	
trans-1,2-Dichloroethene	ND	ug/l	0.5	1.00	09/20/99	KST	156-60-5		
1,1-Dichloroethane	ND	ug/l	0.5	1.00	09/20/99	KST	75-34-3		
cis-1,2-Dichloroethene	ND	ug/l	0.5	1.00	09/20/99	KST	156-59-2		
Bromochloromethane	ND	ug/l	0.5	1.00	09/20/99	KST	74-97-5		
Chloroform	7.9	ug/l	0.5	1.00	09/20/99	KST	67-66-3		
2,2-Dichloropropane	ND	ug/l	0.5	1.00	09/20/99	KST	594-20-7		
1,2-Dichloroethane	ND	ug/l	0.5	1.00	09/20/99	KST	107-06-2		
1,1,1-Trichloroethane	ND	ug/l	0.5	1.00	09/20/99	KST	71-55-6		
1,1-Dichloropropene	ND	ug/l	0.5	1.00	09/20/99	KST	563-58-6		
Carbon Tetrachloride	ND	ug/1	0.5	1.00	09/20/99	KST	56-23-5		
Dibromomethane	ND	ug/l	0.5	1.00	09/20/99	KST	74-95-3		
1.2-Dichloropropane	` ND	ug/l	0.5	1.00	09/20/99	KST	78-87-5		
Trichloroethene	ND	ug/l	0.5	1.00	09/20/99	KST	79-01-6		
Bromodichloromethane	1.6	ug/1	0.5	1.00	09/20/99	KST	75-27-4		
cis-1,3-Dichloropropene	ND	ug/l	0.5	1.00	09/20/99	KST	10061-01-5		
trans-1,3-Dichloropropene	ND .	ug/l	0.5	1.00	09/20/99	KST	10061-02-6		
1,1,2-Trichloroethane	ND	ug/l	0.5	1.00	09/20/99	KST	79-00-5		
1.3-Dichloropropane	ND	ug/1	0.5	1.00	09/20/99	KST	142-28-9		
Dibromochloromethane	ND	ug/1	0.5	1.00	09/20/99	KST	124-48-1		
1.2-Dibromoethane	ND	ug/1	0.5	1.00	09/20/99	KST	106-93-4		
Tetrachloroethene	ND	ug/l	0.5	1.00	09/20/99		127-18-4		
1,1,1,2-Tetrachloroethane	ND	ug/1	0.5	1.00	09/20/99		630-20-6		
Chlorobenzene	ND	ug/1	0.5	1.00	09/20/99		108-90-7		
Bromoform	ND	ug/l	0.5	1.00	09/20/99		75-25-2		
1.1.2.2-Tetrachloroethane	ND	ug/1	0.5	1.00	09/20/99		79-34-5		
1.2.3-Trichloropropane	ND	ug/1	0.5	1.00	09/20/99		96-18-4		
Bromobenzene	ND	ug/1	0.5	1.00	09/20/99		108-86-1		
2-Chlorotoluene	ND	ug/1	0.5	1.00	09/20/99		95-49-8		

Laboratory Certification IDsNC Wastewater12NC Drinking Water37706SC99006

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DATE: 09/23/99 PAGE: 12

Pace Project Number: 928662

Pace Sample No: 92623768 Client Sample ID: MW-4			Date Col Date Re		9/09/99 9/10/99		Water	
Parameters	Results	Units	PRL	App. DF	Analyzed	Analyst	: CAS#	Footnotes
4-Chlorotoluene	ND	ug/1	0.5	1.00	09/20/99	KST	106-43-4	
1,3-Dichlorobenzene	ND	ug/1	1	1.00	09/20/99	KST	541-73-1	
1,4-Dichlorobenzene	ND	ug/l	1	1.00	09/20/99	KST	106-46-7	
1,2-Dichlorobenzene	ND	ug/l	1	1.00	09/20/99	KST	95-50-1	
1.2-Dibromo-3-Chloropropane	ND	ug/l	2	1.00	09/20/99	KST	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/l	2	1.00	09/20/99	KST	120-82-1	
Hexachlorobutadiene	ND	ug/l	2	1.00	09/20/99	KST	87-68-3	•
1.2.3-Trichlorobenzene	ND	ug/l	2	1.00	09/20/99	KST	87-61-6	
Methyl·tert-butyl Ether	ND	ug/l	0.5	1.00	09/20/99	KST	1634-04-4	
Isopropyl Ether	1.1	ug/l	0.5	1.00	09/20/99	KST	108-20-3	
Benzene	ND	ug/l	0.5	1.00	09/20/99	KST	71-43-2	
Toluene	ND	ug/l	0.5	1.00	09/20/99	KST	108-88-3	
Ethylbenzene	ND	ug/l	0.5	1.00	09/20/99	KST	100-41-4	
m&p-Xylene	ND	ug/l	0.5	1.00	09/20/99	KST	7816-60-0	
Styrene	ND	ug/l	0.5	1.00	09/20/99	KST	100-42-5	
o-Xylene (1,2-Dimethylbenzene) ND	ug/l	0.5	1.00	09/20/99	KST	95-47-6	
Isopropylbenzene (Cumene)	ND	ug/l	0.5	1.00	09/20/99	KST	98-82-8	
n-Propylbenzene	ND	ug/l	0.5	1.00	09/20/99	KST	103-65-1	
1.3.5·Trimethylbenzene	ND	ug/l	0.5	1.00	09/20/99	KST	108-67-8	
tert-Butylbenzene	ND	ug/1	0.5	1.00	09/20/99	KST	98-06-6	
1.2.4-Trimethylbenzene	ND	ug/1	0.5	1.00	09/20/99	KST	95-63-6	
sec-Butylbenzene	ND	ug/1	0.5	1.00	09/20/99	KST	135-98-8	
p-Isopropyltoluene .	ND	ug/l	1	1.00	09/20/99	KST	99-87-6	
n-Butylbenzene	ND	ug/l	1	1.00	09/20/99	KST	104-51-8	
Naphthalene	ND	ug/l	2	1.00	09/20/99	KST	91-20-3	
1-Chloro-3-fluorobenzene (S)	112	X		1.00	09/20/99		625-98-9	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99

PAGE: 5

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: 926 Client Sample ID: MW-	23735 5			Date Collect Date Recei		/09/99 /10/99		Matrix: Wa	ater
Parameters	Re	sults '	Units	PRL	App. DF	Analyzed	Analyst	CAS#	Footnotes
GC Volatiles									
GC VOCs in Water		Method:	SM 6230D			Prep Meth	od: SM 6	5230D	
Dichlorodifluoromethan	e ND		ug/l	0.5	1.00	09/21/99	KST	75-71-8	
Chloromethane	ND	:	ug/l	0.5	1.00	09/21/99	KST	74-87-3	
Vinyl Chloride	ND		ug/]	0.5	1.00	09/21/99	KST	75-01-4	
Bromomethane	ND		ug/l	0.5	1.00	09/21/99	KST	74-83-9	
Chloroethane	ND		ug/l	0.5	1.00	09/21/99	KST	75-00-3	
Trichlorofluoromethane	ND		ug/l	0.5	1.00	09/21/99	KST	75-69-4	
1,1-Dichloroethene	ND		ug/l	0.5	1.00	09/21/99	KST	75-35-4	•
Methylene Chloride	6.	9	ug/l	0.5	1.00	09/21/99	KST	75-09-2	1
trans-1,2-Dichloroethe	ne ND		ug/l	0.5	1.00	09/21/99	KST	156-60-5	
1.1-Dichloroethane	ND		ug/l	0.5	1.00	09/21/99	KST	75-34-3	
cis-1,2-Dichloroethene	. ND		ug/l	0.5	1.00	09/21/99	KST	156-59-2	
Bromochloromethane	ND		ug/l	0.5	1.00	09/21/99	KST	74-97-5	
Chloroform	3.	5	ug/1	0.5	1.00	09/21/99	KST	67-66-3	
2,2-Dichloropropane	NO		ug/l	0.5	1.00	09/21/99	KST	594-20-7	
1,2-Dichloroethane	ND		ug/l	0.5	1.00	09/21/99	KST	107-06-2	
1,1.1-Trichloroethane	ND		ug/l	0.5	1.00	09/21/99	KST	71-55-6	
1,1-Dichloropropene	ND		ug/l	0.5	1.00	09/21/99	KST	563-58-6	
Carbon Tetrachloride	ND		ug/l	0.5	1.00	09/21/99	KST	56-23-5	
Dibromomethane	, ND		ug/l	0.5	1.00	09/21/99	KST	74-95-3	
1,2-Dichloropropane	ND		ug/1	0.5	1.00	09/21/99	KST	78-87-5	
Trichloroethene	ND		ug/l	0.5	1.00	09/21/99	KST	79-01-6	
Bromodichloromethane	ND		ug/1	0.5	1.00	09/21/99	KST	75-27-4	
cis-1,3-Dichloroproper			ug/1	0.5	1.00	09/21/99	KST	10061-01-5	
trans-1,3-Dichloroprop			ug/l	0.5	1.00	09/21/99	KST	10061-02-6	
1,1,2-Trichloroethane	NC		ug/1	0.5	1.00	09/21/99	KST	79-00-5	
1.3-Dichloropropane	NE		ug/1	0.5	1.00	09/21/99	KST	142-28-9	
Dibromochloromethane	ND		ug/1	0.5	1.00	09/21/99	KST	124-48-1	
1.2-Dibromoethane	ND		ug/l	0.5	1.00	09/21/99	KST	106-93-4	
Tetrachloroethene	NE		ug/1	0.5	1.00	09/21/99	KST	127-18-4	
1.1.1,2-Tetrachloroeth			ug/1	0.5	1.00	09/21/99	KST	630-20-6	
Chlorobenzene	NC NC		ug/l	0.5	1.00	09/21/99	KST	108-90-7	
Bromoform	NE		ug/l	0.5	1.00	09/21/99	KST	75-25-2	
1.1.2.2-Tetrachloroeth			ug/1	0.5	1.00	09/21/99	KST	79-34-5	
1,2,3-Trichloropropane			ug/l	0.5	1.00	09/21/99	KST	96-18-4	
Bromobenzene	NC NC		ug/1	0.5	1.00	09/21/99	KST	108-86-1	
2-Chlorotoluene	NC		ug/l	0.5	1.00	09/21/99		95-49-8	

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99

PAGE: 6

Pace Project Number: 928662

Pace Sample No: 92623 Client Sample ID: MW-5	3735		Date Col Date Re		9/09/99 9/10/99		Matrix: W	ater
Parameters	Results	Units	PRL	App. DF	Analyzed	Analys	t CAS#	Footnotes
4-Chlorotoluene	ND	ug/l	0.5	1.00	09/21/99	KST	106-43-4	*********
1,3-Dichlorobenzene	ND	ug/l	1	1.00	09/21/99	KST	541-73-1	
1.4-Dichlorobenzene	ND	ug/1	1	1.00	09/21/99	KST	106-46-7	
1,2-Dichlorobenzene	ND	ug/l	1	1.00	09/21/99	KST	95-50-1	
1,2-Dibromo-3-Chloroprop	ane ND	ug/1	2	1.00	09/21/99	KST	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/l	2	1.00	09/21/99	KST	120-82-1	
Hexachlorobutadiene	ND	ug/l	2	1.00	09/21/99	KST	87-68-3	
1,2,3-Trichlorobenzene	ND	ug/1	2	1.00	09/21/99	KST	87-61-6	
Methyl-tert-butyl Ether	ND	ug/l	0.5	1.00	09/21/99	KST	1634-04-4	•
Isopropyl Ether	ND	ug/l	0.5	1.00	09/21/99	KST	108-20-3	
Benzene	ND	ug/l	0.5	1.00	09/21/99	KST	71-43-2	
Toluene	ND	ug/l	0.5	1.00	09/21/99	KST	108-88-3	
Ethylbenzene	ND	ug/l	0.5	1.00	09/21/99	KST	100-41-4	
m&p-Xylene	ND	ug/l	0.5	1.00	09/21/99	KST	7816-60-0	
Styrene	ND	ug/1	0.5	1.00	09/21/99	KST	100-42-5	
o-Xylene (1.2-Dimethylbe	enzene) ND	ug/l	0.5	1.00	09/21/99	KST	95-47-6	
Isopropylbenzene (Cumene		ug/l	0.5	1.00	09/21/99	KST	98-82-8	
n-Propylbenzene	ND	ug/1	0.5	1.00	09/21/99	KST	103-65-1	
1.3.5-Trimethylbenzene	ND	ug/1	0.5	1.00	09/21/99	KST	108-67-8	
tert-Butylbenzene	ND	ug/l	0.5	1.00	09/21/99	KST	98-06-6	
1.2.4-Trimethylbenzene	ND	ug/l	0.5	1.00	09/21/99	KST	95-63-6	
sec-Butylbenzene	ND .	ug/l	0.5	1.00	09/21/99	KST	135-98-8	
p-Isopropyltoluene	·. ND	ug/l	1	1.00	09/21/99	KST	99-87-6	
n-Butylbenzene	ND	ug/l	1	1.00	09/21/99	KST	104-51-8	
Naphthalene	ND	ug/l	2	1.00	09/21/99	KST	91-20-3	
1-Chloro-3-fluorobenzene	e (S) 113	X		1.00	09/21/99	KST	625-98-9	

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DATE: 09/23/99

PAGE: 7

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: 92623743 Client Sample ID: MW-6			Date Collect Date Rece		9/09/99 9/10/99		Matrix: Wa	iter
Parameters	Results	Units	PRL	App. DF	Analyzed	Analys	t CAS#	Footnotes
					•••••	• • • • •		
GC Volatiles								
GC VOCs in Water	Method	i: SM 6230D			Prep Meth	od: SM (6230D	
Dichlorodifluoromethane	ND	ug/l	0.5	1.00	09/17/99	KST	75-71-8	
Chloromethane	ND	ug/l	0.5	1.00	09/17/99	KST	74-87-3	
Vinyl Chloride	ND	ug/l	0.5	1.00	09/17/99	KST	75-01-4	
Bromomethane	ND	ug/1	0.5	1.00	09/17/99	KST	74-83-9	
Chloroethane	ND	ug/1	0.5	1.00	09/17/99	KST	75-00-3	
Trichlorofluoromethane	ND	ug/l	0.5	1.00	09/17/99	KST	75-69-4	
1,1-Dichloroethene	ND	ug/l	0.5	1.00	09/17/99	KST	75-35-4	
Methylene Chloride	1.9	ug/l	0.5	1.00	09/17/99	KST	75-09-2	1
trans-1,2-Dichloroethene	2.2	ug/l	0.5	1.00	09/17/99	KST	156-60-5	•
1.1-Dichloroethane	ND	ug/1	0.5	1.00	09/17/99	KST	75-34-3	
cis-1,2-Dichloroethene	380	ug/l	5	10.0	09/17/99	KST	156-59-2	
Bromochloromethane	ND	ug/l	0.5	1.00	09/17/99	KST	74-97-5	
Chloroform	11	ug/l	0.5	1.00	09/17/99	KST	67-66-3	
2,2-Dichloropropane	ND	ug/1	0.5	1.00	09/17/99	KST	594-20-7	
1.2-Dichloroethane	ND	ug/1	0.5	1.00	09/17/99	KST	107-06-2	
1,1.1-Trichloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	71-55-6	
1.1-Dichloropropene	ND	ug/l	0.5	1.00	09/17/99	KST	563-58-6	
Carbon Tetrachloride	ND	ug/l	0.5	1.00	09/17/99	KST	56-23-5	
Dibromomethane	· ND .	ug/l	0.5	1.00	09/17/99	KST	74-95-3	
1,2-Dichloropropane	ND .	ug/l	0.5	1.00	09/17/99	KST	78-87-5	
Trichloroethene	96	ug/l	5	10.0	09/17/99	KST	79-01-6	
Bromodichloromethane	ND	ug/l	0.5	1.00	09/17/99	KST	75-27-4	
cis-1,3-Dichloropropene	ND	ug/l	0.5	1.00	09/17/99	KST	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/l	0.5	1.00	09/17/99		10061-02-6	
1.1.2-Trichloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	79-00-5	
1.3-Dichloropropane	ND	ug/l	0.5	1.00	09/17/99	KST	142-28-9	
Dibromochloromethane	ND	ug/1	0.5	1.00	09/17/99	KST	124-48-1	
1,2-Dibromoethane	ND	ug/l	0.5	1.00	09/17/99	KST	106-93-4	
Tetrachloroethene	1800	ug/1	50	100	09/17/99		127-18-4	
1.1.1.2-Tetrachloroethane	6.7	ug/l	0.5	1.00	09/17/99	KST	630-20-6	
Chlorobenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-90-7	
Bromoform	ND	ug/l	0.5	1.00	09/17/99	KST	75-25-2	
1.1.2.2-Tetrachloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	79-34-5	
1.2.3-Trichloropropane	ND	ug/l	0.5	1.00	09/17/99	KST	96-18-4	
Bromobenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-86-1	
2-Chlorotoluene	ND	ug/l	0.5	1.00	09/17/99		95-49-8	

Laboratory Certification IDs NC Wastewater 12 NC Drinking Water 37706 SC 99006

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99

PAGE: 8

Pace Project Number: 928662

·	2623743 I-6			Date Co Date Re	llected: eceived:		/09/99 /10/99		Matrix:	Water
Parameters		Results	Units	PRL	App. I	DF	Analyzed	Analys ⁻	t CAS#	Footnotes
4-Chlorotoluene	*******	ND	 ug/1	0.5	1.00		09/17/99	KST	106-43-4	
1,3-Dichlorobenzene		ND	ug/l	1	1.00		09/17/99	KST	541-73-1	
1,4-Dichlorobenzene		ND	ug/1	1	1.00		09/17/99	KST	106-46-7	
1,2-Dichlorobenzene		ND	ug/l	1	1.00		09/17/99	KST	95-50-1	
1,2-Dibromo-3-Chlorop	ropane	ND	ug/l	2	1.00		09/17/99	KST	96-12-8	•
1.2.4-Trichlorobenzer	ie	ND	ug/l	2	1.00		09/17/99	KST	120-82-1	
Hexachlorobutadiene		ND	ug/l	2	1.00		09/17/99	KST	87-68-3	
1,2,3-Trichlorobenzer	ie	ND	ug/l	2	1.00		09/17/99	KST	87-61-6	
Methyl-tert-butyl Eth	er	ND	ug/1	0.5	1.00		09/17/99	KST	1634-04-4	ļ
Isopropyl Ether		ND	ug/l	0.5	1.00		09/17/99	KST	108-20-3	
Benzene		ND	ug/l	0.5	1.00		09/17/99	KST	71-43-2	
Toluene		ND	ug/l	0.5	1.00		09/17/99	KST	108-88-3	
Ethy1benzene		ND	ug/1	0.5	1.00		09/17/99	KST	100-41-4	
m&p-Xylene		ND	ug/l	0.5	1.00		09/17/99	KST	7816-60-0)
Styrene		ND	ug/l	0.5	1.00		09/17/99	KST	100-42-5	
o-Xylene (1.2-Dimethy	lbenzene)	ND	ug/l	0.5	1.00		09/17/99	KST	95-47-6	
Isopropylbenzene (Cum	iene)	ND	ug/l	0.5	1.00		09/17/99	KST	98-82-8	
n-Propylbenzene		ND	ug/l	0.5	1.00		09/17/99	KST	103-65-1	
1,3,5-Trimethylbenzen	e	ND	ug/l	0.5	1.00		09/17/99	KST	108-67-8	
tert-Butylbenzene		ND	ug/l	0.5	1.00		09/17/99	KST	98-06-6	
1.2.4-Trimethylbenzen	e	ND	ug/1	0.5	1.00		09/17/99	KST	95-63-6	
sec·Butylbenzene		ND	ug/l	0.5	1.00		09/17/99	KST	135-98-8	
p-Isopropyltoluene	`,	ND	ug/l	1	1.00		09/17/99	KST	99-87-6	
n-Butylbenzene	•	ND	ug/l	1	1.00		09/17/99	KST	104-51-8	
Naphthalene `		ND	ug/l	2	1.00		09/17/99	KST	91-20-3	
1-Chloro-3-fluorobenz	ene (S)	122	*		1.00		09/17/99	KST	625-98-9	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 9

Pace Project Number: 928662

	92623750 OUPLICATE			Date Collect Date Recei)/09/99)/10/99		Matrix: Wa	ter
Parameters		Results	Units	PRL	App. DF	Analyzed	Analvs	+ CΔ S #	Footnotes
, ar ameder o									
GC Volatiles									
GC VOCs in Water		Mothor	I: SM 6230D			Prep Meth	nd. SM	5230D	
Dichlorodifluorometh	nano	ND	ug/l	0.5	1.00	09/17/99		75-71 - 8	
Chloromethane	iane	ND	ug/l	0.5	1.00	09/17/99		74-87-3	
Vinyl Chloride		ND	ug/l	0.5	1.00	09/17/99	KST	75-01-4	
Bromomethane		ND	ug/1	0.5	1.00	09/17/99	KST	74-83-9	
Chloroethane			ug/1	0.5	1.00	09/17/99	KST	75-00-3	
Trichlorofluorometha	no	ND ND	ug/1 ug/1	0.5	1.00	09/17/99	KST	75-69-4	
1,1.Dichloroethene	ane.	ND ND	ug/1 ug/1	0.5	1.00	09/17/99	KST	75-69-4 75-35-4	
Methylene Chloride			ug/1 ug/l	0.5	1.00	09/17/99	KST	75-35-4 75-09-2	1
trans-1,2-Dichloroet	-hana	3.5 ND	ug/1 ug/1	0.5	1.00	09/17/99	KST	156-60-5	1
1,1-Dichloroethane	mene	ND ND	ug/1 ug/1	0.5	1.00	09/17/99	KST	75-34-3	
cis-1,2-Dichloroethe	200	ND ND	ug/1 ug/1	0.5	1.00	09/17/99	KST	156-59-2	
Bromochloromethane	ene		ug/1 ug/1	0.5	1.00	09/17/99	KST	74-97-5	
Chloroform		ND		0.5 0.5	1.00	09/17/99	KST	67-66-3	
2,2.Dichloropropane		3.3	ug/l	0.5	1.00	09/17/99	KST	594-20-7	
1,2-Dichloroethane		ND	ug/l	0.5	1.00	09/17/99	KST	107-06-2	
1,1,1-Trichloroethar		ND	ug/l	0.5	1.00	09/17/99	KST	71-55-6	
	1e	ND	ug/1	0.5	1.00	09/17/99	KST		
1,1-Dichloropropene	_	ND	ug/1					563-58-6	
Carbon Tetrachloride Dibromomethane	2	ND	ug/1	0.5	1.00	09/17/99	KST	56-23-5	
	•.	ND	ug/1	0.5	1.00	09/17/99	KST	74-95-3	
1,2-Dichloropropane		ND	ug/l	0.5	1.00	09/17/99	KST	78-87-5	
Trichloroethene		ND	ug/l	0.5	1.00	09/17/99	KST	79-01-6	
Bromodichloromethane		ND	ug/l	0.5	1.00	09/17/99	KST	75-27-4	
cis-1,3-Dichloroprop		ND	ug/l	0.5	1.00	09/17/99	KST	10061-01-5	
trans-1,3-Dichloropr	•	ND	ug/l	0.5	1.00	09/17/99	KST	10061-02-6	
1,1,2-Trichloroethar	ne	ND	ug/l	0.5	1.00	09/17/99	KST	79-00-5	
1.3-Dichloropropane		ND	ug/l	0.5	1.00	09/17/99	KST	142-28-9	
Dibromochloromethane	9	ND .	ug/l	0.5	1.00	09/17/99	KST	124-48-1	
1.2-Dibromoethane		ND	ug/l	0.5	1.00	09/17/99	KST	106-93-4	
Tetrachloroethene		ND	ug/l	0.5	1.00	09/17/99		127 - 18 - 4	
1.1.1.2-Tetrachloroe	ethane	ND	ug/l	0.5	1.00	09/17/99	KST	630-20-6	
Chlorobenzene		ND	ug/l	0.5	1.00	09/17/99	KST	108-90-7	
Bromoform		ND .	ug/l	0.5	1.00	09/17/99	KST	75-25-2	
1.1.2,2-Tetrachloroe		ND	ug/l	0.5	1.00	09/17/99	KST	79-34-5	
1.2.3-Trichloropropa	ane	ND	ug/l	0.5	1.00	09/17/99	KST	96-18-4	
Bromobenzene		ND	ug/1	0.5	1.00	09/17/99	KST	108-86-1	
2-Chlorotoluene		ND	ug/1	0.5	1.00	09/17/99	KST	95-49-8	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 10

Pace Project Number: 928662

Pace Sample No: 92623750 Client Sample ID: DUPLICATE			Date Collected: Date Received:		09/09/99 09/10/99		Matrix: Water	
Parameters	Results	Units	PRL	App. DF	Analyzed	Analys	t CAS#	Footnotes
4-Chlorotoluene	ND	ug/l	0.5	1.00	09/17/99	KST	106-43-4	*********
1,3-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	541-73-1	
1,4-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	106-46-7	
1,2-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/l	2	1.00	09/17/99	KST	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/l	2	1.00	09/17/99	KST	120-82-1	
Hexachlorobutadiene	ND	ug/l	2	1.00	09/17/99	KST	87-68-3	
1,2,3-Trichlorobenzene	ND	ug/l	2	1.00	09/17/99	KST	87-61-6	
Methyl-tert-butyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	1634-04-4	
Isopropyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	108-20-3	
Benzene	ND	ug/l	0.5	1.00	09/17/99	KST	71-43-2	
Toluene	ND	ug/l	0.5	1.00	09/17/99	KST	108-88-3	
Ethy1benzene	ND	ug/l	0.5	1.00	09/17/99	KST	100-41-4	
m&p-Xylene	ND	ug/l	0.5	1.00	09/17/99	KST	7816-60-0	
Styrene	ND	ug/l	0.5	1.00	09/17/99	KST	100-42-5	
o-Xylene (1,2-Dimethylbenzene)	ND	ug/l	0.5	1.00	09/17/99	KST	95-47-6	-
Isopropylbenzene (Cumene)	ND	ug/l	0.5	1.00	09/17/99	KST	98-82-8	
n-Propylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	103-65-1	
1.3.5.Trimethylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-67-8	
tert-Butylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	98-06-6	
1.2.4-Trimethylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	95-63-6	
sec-Butylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	135-98-8	
p-Isopropyltoluene .	ND	ug/l	1	1.00	09/17/99	KST	99-87-6	
n-Butylbenzene	ND	ug/l	1	1.00	09/17/99	KST	104-51-8	
Naphthalene	ND	ug/l	2	1.00	09/17/99	KST	91-20-3	
1-Chloro-3-fluorobenzene (S)	111	X		1.00	09/17/99	KST	625-98-9	

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 15

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: 92623784 Client Sample ID: TRIP BLAN	1/		Date Collected: 09/09/99 Date Received: 09/10/99			Matrix: Water				
CITETIC Sample ID. TRIP BLAN	K		Date Nece	ivea. 03	7/ 10/ 33					
Parameters	Results	Units	PRL	App. DF	Analyzed	Analys	st CAS#	Footnotes		
				•••••		• • • • •	•••••			
GC Volatiles	٠									
GC VOCs in Water	Method	d: SM 6230D			Prep Meth	nod: SM	6230D			
Dichlorodifluoromethane	ND	ug/1	0.5	1.00	09/17/99	KST	75-71-8			
Chloromethane	ND	ug/l	0.5	1.00	09/17/99	KST	74-87-3			
Vinyl Chloride	ND	ug/l	0.5	1.00	09/17/99	KST	75-01-4			
Bromomethane	ND	ug/1	0.5	1.00	09/17/99	KST	74-83-9			
Chloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	75-00-3			
Trichlorofluoromethane	ND	ug/l	0.5	1.00	09/17/99	KST	75-69-4			
1.1.Dichloroethene	ND	ug/1	0.5	1.00	09/17/99	KST	75-35-4			
Methylene Chloride	2.2	ug/l	0.5	1.00	09/17/99	KST	75-09-2	1		
trans-1,2-Dichloroethene	ND	ug/1	0.5	1.00	09/17/99	KST	156-60-5			
1.1-Dichloroethane	ND	ug/1	0.5	1.00	09/17/99	KST	75-34-3			
cis-1.2-Dichloroethene	ND	ug/1	0.5	1.00	09/17/99	KST	156-59-2			
Bromochloromethane	ND	ug/1	0.5	1.00	09/17/99	KST	74-97-5			
Chloroform	ND	ug/l	0.5	1.00	09/17/99	KST	67-66-3			
2,2-Dichloropropane	ND	ug/l	0.5	1.00	09/17/99	KST	594-20-7			
1,2-Dichloroethane	ND	ug/1	0.5	1.00	09/17/99	KST	107-06-2			
1.1.1-Trichloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	71-55-6			
1,1-Dichloropropene	ND	ug/l	0.5	1.00	09/17/99	KST	563-58-6			
Carbon Tetrachloride	ND	ug/1	0.5	1.00	09/17/99	KST	56-23-5			
Dibromomethane .	ND	ug/l	0.5	1.00	09/17/99	KST	74-95-3			
1.2-Dichloropropane	ND	ug/1	0.5	1.00	09/17/99	KST	78-87-5			
Trichloroethene	ND	ug/l	0.5	1.00	09/17/99	KST	79-01-6			
Bromodichloromethane	ND	ug/l	0.5	1.00	09/17/99	KST	75-27-4			
cis-1,3-Dichloropropene	ND	ug/l	0.5	1.00	09/17/99	KST	10061-01-5			
trans-1,3-Dichloropropene	ND	ug/l	0.5	1.00	09/17/99	KST	10061-02-6			
1.1.2-Trichloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	79-00-5			
1,3-Dichloropropane	ND	ug/l	0.5	1.00	09/17/99	KST	142-28-9			
Dibromochloromethane	ND	ug/1	0.5	1.00	09/17/99	KST	124-48-1			
1.2-Dibromoethane	ND	ug/l	0.5	1.00	09/17/99	KST	106-93-4			
Tetrachloroethene	ND	ug/l	0.5	1.00	09/17/99	KST	127-18-4			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	630-20-6			
Chlorobenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-90-7			
Bromoform	ND	ug/l	0.5	1.00	09/17/99	KST	75-25-2			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.5	1.00	09/17/99	KST	79-34-5			
1.2.3-Trichloropropane	ND	ug/1	0.5	1.00	09/17/99	KST	96-18-4			
Bromobenzene	ND	ug/l	0.5	1.00	09/17/99	KST	108-86-1			
2-Chlorotoluene	ND	ug/l	0.5	1.00	09/17/99		95-49-8			

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

REPORT OF LABORATORY ANALYSIS

> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 16

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Pace Sample No: 92623784 Client Sample ID: TRIP BLANK					09/09/99 09/10/99		Matrix: Water		
Parameters	Results	Units	PRL	App. DF	Analyzed	Analyst	: CAS#	Footnotes	
4-Chlorotoluene	ND .	ug/1	0.5	1.00	09/17/99	KST	106-43-4		
1,3-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	541-73-1		
1,4-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	106-46-7		
1,2-Dichlorobenzene	ND	ug/l	1	1.00	09/17/99	KST	95-50-1		
1,2-Dibromo-3-Chloropropane	ND	ug/l	2 .	1.00	09/17/99	KST	96-12-8		
1.2.4-Trichlorobenzene	ND	ug/l	2	1.00	09/17/99	KST	120-82-1		
Hexachlorobutadiene	ND	ug/l	2	1.00	09/17/99	KST	87-68-3		
1,2,3-Trichlorobenzene	ND	ug/1	2	1.00	09/17/99	KST	87-61-6		
Methyl-tert-butyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	1634-04-4		
Isopropyl Ether	ND	ug/l	0.5	1.00	09/17/99	KST	108-20-3		
Benzene	ND	ug/l	0.5	1.00	09/17/99	KST	71-43-2		
Toluene ·	ND	ug/l	0.5	1.00	09/17/99	KST	108-88-3		
Ethylbenzene	ND	ug/l	0.5	. 1.00	09/17/99	KST	100-41-4		
m&p-Xylene	ND	ug/1	0.5	1.00	09/17/99	KST	7816-60-0		
Styrene	ND	ug/1	0.5	1.00	09/17/99	KST	100-42-5		
o-Xylene (1.2-Dimethylbenzene)	ND	ug/1	0.5	1.00	09/17/99	KST	95-47-6		
Isopropylbenzene (Cumene)	ND	ug/l	0.5	1.00	09/17/99	KST	98-82-8		
n-Propylbenzene	ND	ug/l	0.5	1.00	09/17/99	KST	103-65-1		
1.3.5-Trimethylbenzene	ND	ug/1	0.5	1.00	09/17/99	KST	108-67-8		
tert-Butylbenzene	ND	ug/1	0.5	1.00	09/17/99	KST	98-06-6		
1,2,4-Trimethylbenzene	ND	ug/1	0.5	1.00	09/17/99	KST	95-63-6		
sec-Butylbenzene	ND .	ug/l	0.5	1.00	09/17/99	KST	135-98-8		
p-Isopropyltoluene .	ND	ug/l	1	1.00	09/17/99	KST	99-87-6		
n-Butylbenzene	ND	ug/l	1	1.00	09/17/99	KST	104-51-8		
Naphthalene	ND	ug/l	2	1.00	09/17/99	KST	91-20-3		
1-Chloro-3-fluorobenzene (S)	111	*	•	1.00	09/17/99	KST	625-98-9		

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DATE: 09/23/99 PAGE: 17

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

PARAMETER FOOTNOTES

ND Not Detected
NC Not Calculable
PRL Pace Reporting Limit

(S) Surrogate

App. DF Applied Dilution Factor

[1] Analyte is found in the associated blank as well as in the sample (CLP B-Flag).

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QUALITY CONTROL DATA

DATE: 09/23/99

PAGE: 18

ARCADIS Geraghty & Miller

P.O. Box 31388 2301 Rexwoods Dr. Raleigh, NC 27607 Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Attn: Mr. Matt Hudson Phone: (919)782-5511

QC Batch ID: 17398

QC Batch Method: SM 6230D

92623735

Analysis Method: SM 6230D

Analysis Description: GC VOCs in Water

Associated Pace Samples:

Associated Pace Samples:

92623719 92623727

92623735 92623743

92623743

92623750

92623768

92623776

92623750

92623768

.92623776

92623784

METHOD BLANK: 92634559

92623727

Method Blank

	92623719
	92623784
arameter	Units

Parameter	Units	Result	PRL	Footnotes
Dichlorodifluoromethane	ug/1	ND	0.5	••••••••
Chloromethane	ug/l	ND	0.5	
Vinyl Chloride	ug/1	ND	0.5	
Bromomethane '	ug/l	ND	0.5	
Chloroethane	ug/l	ND	0.5	
Trichlorofluoromethane	·_ug/l	ND	0.5	
1.1-Dichloroethene	ug/1	ND	0.5	
Methylene Chloride	ug/l	2.2	0.5	1
trans-1,2-Dichloroethene	ug/l	ND	0.5	
1,1-Dichloroethane	ug/l	ND	0.5	
cis-1.2-Dichloroethene	ug/l	ND	0.5	
Bromochloromethane	ug/l	ND	0.5	
Chloroform	ug/l	ND	0.5	
2,2-Dichloropropane	ug/l	ND	0.5	
1.2-Dichloroethane	ug/l	ND	0.5	
1,1,1-Trichloroethane	ug/l	ND	0.5	
1,1-Dichloropropene	ug/l	ND	0.5	
Carbon Tetrachloride	ug/l	ND	0.5	
Dibromomethane	ug/l	ND	0.5	
1,2-Dichloropropane	ug/l	ND	0.5	
Trichloroethene	ug/1	ND	0.5	
Bromodichloromethane	ug/l	ND	0.5	

ug/1

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

cis-1,3-Dichloropropene

0.5

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QUALITY CONTROL DATA

DATE: 09/23/99

PAGE: 19

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

Associated Pace Samples:	92623719	92623727	92623735	92623743	92623750	92623768	02622776
	92623719	32023/2/	JZUZ3/33	36063743	32023/30	JZUZ3/08	92623776
	J2023704	Method					
		Blank					
Parameter	Units	Result	PRL	Footnotes	-		
trans-1,3-Dichloropropene	ug/l	ND	0.5				
1,1,2-Trichloroethane	ug/l	ND	0.5				
.,3-Dichloropropane	ug/l	ND	0.5				
)ibromochloromethane	ug/l	ND	0.5				
2-Dibromoethane	ug/l	ND	0.5				•
[etrach]oroethene	ug/l	ND	0.5				
.1.1.2-Tetrachloroethane	ug/l	ND	0.5				
Chlorobenzene	·ug/l	ND	0.5				
Bromoform	ug/1	ND	0.5				
l.1.2,2-Tetrachloroethane	ug/l	ND	0.5				
1,2,3-Trichloropropane	ug/l	ND	0.5				
Bromobenzene	ug/l	ND	0.5				
2-Chlorotoluene	ug/1	ND	0.5				
l-Chlorotoluene	ug/l	ND	0.5				
.3-Dichlorobenzene	ug/l	ND	1				
.4-Dichlorobenzene	ug/l	ND	1				
.2-Dichlorobenzene	ug/l	ND	1				
.2-Dibromo-3-Chloropropane	ug/l	ND	2				
l.2.4-Trichlorobenzene	ug/l	ND	2				
lexachlorobutadiene	.ug/l	ND	2				
.2.3-Trichlorobenzene	ùg/1	ND	2				
Methyl-tert-butyl Ether	ug/l	ND	0.5				
Sopropyl Ether	ug/l	ND	0.5				
Benzene	ug/l	ND	0.5			•	
Toluene Toluene	ug/1	ND	0.5				
thylbenzene	ug/l	ND	0.5				
ı&p-Xylene	ug/1	ND	0.5				
Styrene	ug/1	ND	0.5				
o-Xylene (1.2-Dimethylbenzene)		ND	0.5				
sopropylbenzene (Cumene)	ug/l	ND	0.5				
-Propylbenzene	ug/1	ND	0.5				
.,3,5-Trimethylbenzene	ug/l	ND	0.5				
ert-Butylbenzene	ug/l	ND	0.5				
.2.4-Trimethylbenzene	ug/l	ND	0.5				
sec-Butylbenzene	ug/l	ND	0.5				
o-Isopropyltoluene	ug/l	ND	1				
n-Butylbenzene	ug/l	ND	1				

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

Laboratory Certification ID

> Tel: 704-875-9092 Fax: 704-875-9091

QUALITY CONTROL DATA

DATE: 09/23/99

PAGE: 20

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

METHOD BLANK: 92634559

Associated Pace Samples:

Parameter

92623719 92623727 92623735 92623743 92623750 92623768

92623776

92623784

Method

Blank

Result Units

PRL

Footnotes

Naphthalene

ug/l

ND

1-Chloro-3-fluorobenzene (S) X 111

MATRIX SPIKE & MATRIX SPIKE	DUPLICATE: 92	634583 92634	583 92634591		Matrix		Spike		
			Spike	Spike	Spike	Sp. Dup.	Dup		
Parameter	Units	92623784	Conc.	Result		Result	% Rec	RPD	Footnotes
Dichlorodifluoromethane	ug/]	0	20	16.25	81.3	17.23	86.1	6	•••••
Chloromethane	ug/l	0	20	31.30	156	30.51	152	3	2,2
Vinyl Chloride .	ug/l	0	20	19.78	98.9	20.60	103	4	
Bromomethane	ug/l	0	20	16.57	82.8	19.98	99.9	19	
Chloroethane	ug/l	0	20	27.33	137	29.38	147	7	2
Trichlorofluoromethane	ug/l	0	20	19.46	97.3	20.02	100	3	
1.1-Dichloroethene	ug/l	0	20	18,56	92.8	18.55	92.7	0	
Methylene Chloride	ug/l	2.164	20	26.02	119	23.66	108	10	
trans-1,2-Dichloroethene	ug/l	0	20	14.85	74.2	14.72	73.6	1	
1,1-Dichloroethane	ug/l	0	20	17.45	87.3	17.28	86.4	1	
cis-1,2-Dichloroethene	ug/l	0	20	16.34	81.7	16.04	80.2	2	
Bromochloromethane	·ug/l	0	20	15.75	78.7	15.97	79.9	2	
Chloroform	ug/l	0	20	17.90	89.5	17.87	89.4	0	
2,2-Dichloropropane	ug/l	0	20	19.53	97.7	19.07	95.3	2	
1,2-Dichloroethane	ug/l	0	20	17.66	88.3	17.69	88.4	0	
1,1,1-Trichloroethane	ug/l	0	20	17.16	85.8	17.03	85.2	1	
1,1-Dichloropropene	ug/l	0	20	18.99	95.0	18.59	92.9	2	
Carbon Tetrachloride	ug/l	0	20	18.96	94.8	18.33	91.6	3	
Dibromomethane	ug/l	0	20	16.95	84.7	17.24	86.2	2	
1,2-Dichloropropane	ug/l	0	20	18.95	94.8	18.49	92.5	2	
Trichloroethene	ug/l	0	20	18.62	93.1	19.10	95.5	3	
Bromodichloromethane	ug/l	0	20	21.35	107	19.27	96.4	10	
cis-1.3-Dichloropropene	ug/l	0	20	17.80	89.0	17.16	85.8	4	
trans-1,3-Dichloropropene	ug/l	0	20	17.15	85.8	15.90	79.5	8	
1.1.2-Trichloroethane	ug/l	0	20	19.05	95.3	17.56	87.8	8	
1,3-Dichloropròpane	ug/1	0	20	18.60	93.0	17.10	85.5	8	
Dibromochloromethane	ug/l	0	20	18.74	93.7	16.98	84.9	10	
1.2-Dibromoethane	ug/l	0	20	18.40	92.0	16.47	82.3	11	
Tetrachloroethene	ug/l	0	20	20.28	101	19.39	96.9	5	

Laboratory Certification IDs NC Wastewater 12 NC Drinking Water 37706 SC 99006

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QUALITY CONTROL DATA

DATE: 09/23/99

PAGE: 21

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

MATRIX SPIKE & MATRIX SPIKE DU	LICATE: 9263	4583 926345	591	Matrix		Matrix	Spike	•	
			Spike	Spike	Spike	Sp. Dup.	Dup		
Parameter	Units	92623784	Conc.	Result	% Rec	Result	% Rec	RPD	Footnotes
				• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •	••••		
1,1,1,2-Tetrachloroethane	ug/1	0	20	17.06	85.3	16.21	81.0	5	
Ch1orobenzene	ug/l	0	20	22.60	113	23.25	116	3	
Bromoform	ug/1	0	20	18.66	93.3	16.99	84.9	9	
1,1,2,2-Tetrachloroethane	ug/l	0	20	18.88	94.4	18.41	92.0	3	
1,2,3-Trichloropropane	ug/1 .	0	20	22.49	112	21.14	106	6	
Bromobenzene	ug/l	0	20	22.56	113	23.29	116	3	
2-Chlorotoluene	ug/l	0	20	18.20	91.0	17.09	85.5	6	
4-Chlorotoluene	ug/l	0	20	20.10	100	18.11	90.6	10	
1,3-Dichlorobenzene	ug/l	0	20	22.04	110	20.91	104	5	
1,4-Dichlorobenzene	ug/l	0	20	22.18	111	22.35	112	1	
1,2-Dichlorobenzene	ug/l	0	20	22.43	112	23.13	116	3	
1.2-Dibromo-3-Chloropropane	ug/l	0	20	20.30	102	18.23	91.2	11	
1,2,4-Trichlorobenzene	ug/l	0	20	21.58	108	21.44	107	1	
Hexachlorobutadiene	ug/l	0	20	22.84	114	24.73	124	8	
1,2,3-Trichlorobenzene	ug/1	0	20	20.81	104	20.88	104	0	
Methyl-tert-butyl Ether	ug/l	0	20	21.96	110	23.66	118	7	
Isopropyl Ether	ug/l	0	20	25.90	130	27.48	137	6	
Benzene	ug/l	0	20	18.16	90.8	18.67	93.3	3	
Toluene	ug/l	0	20	20.99	105	21.62	108	3	•
Ethylbenzene	ug/l	0	20	21.76	109	22.29	112	2	
m&p-Xylene	ug/l	0	40	43.33	108	44.53	111	3	
Styrene	ug/l	0	20	18.10	90.5	18.39	92.0	2	
o-Xylene (1.2-Dimethylbenzene)	ug/l	0	20	21.92	110	22.41	112	2	
Isopropylbenzene (Cumene)	.ug/l	0	20	22.07	110	22.56	113	2	
n-Propylbenzene	ug/l	0	20	22.21	111	22.55	113	2	
1,3,5-Trimethylbenzene	ug/l	0	20	22.15	111	22.44	112	1	
tert-Butylbenzene	ug/l	0	20	22.12	111	22.52	113	2	
1,2,4-Trimethylbenzene	ug/l	0	20	21.74	109	21.50	108	1	
sec-Butylbenzene	ug/l	0	20	22.41	112	23.46	117	5	
p-Isopropyltoluene	ug/l	0	20	20.00	100	22.73	114	13	
n-Butylbenzene	ug/l	0	20	21.60	108	21.40	107	1	
Naphthalene	ug/l	0	20	19.04	95.2	18.94	94.7	1	
1-Chloro-3-fluorobenzene (S)	5 .				108		108		

LABORATORY CONTROL SAMPLE: 92634567											
Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes						

Dichlorodifluoromethane Chloromethane	ug/l ug/l	20 20	22.22 35.42	111 177	2						

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

> Tel: 704-875-9092 Fax: 704-875-9091

QUALITY CONTROL DATA

DATE: 09/23/99 PAGE: 22

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

LABORATORY CONTROL SAMPLE: 92	2634567				
Panamoton	11	Spike	LCS	Spike	Engtrata -
Parameter	Units	Conc.	Result	∦ κec	Footnotes
Vinyl Chloride	ug/l	20	22.71	114	
Bromomethane	ug/l	. 20	25.76	129	
Chloroethane	ug/l	20	32.28	161	3
Trichlorofluoromethane	ug/l	20	21.85	109	
1.1-Dichloroethene	ug/l	20	21.79	109	
Methylene Chloride	ug/l	20	24.38	122	
trans-1,2-Dichloroethene	ug/l	20	18.61	.93.1	
1.1-Dichloroethane	ug/l	20	21.70	109	
cis-1,2-Dichloroethene	ug/l	20	20.55	103	
Bromochloromethane	ug/l	20	19.91	99.5	
Chloroform	ug/l	20	22.77	114	
2,2-Dichloropropane	ug/l	20	25.14	126	
1,2-Dichloroethane	ug/l	20	22.60	113	
1,1,1-Trichloroethane	ug/l	20	21.57	108	
1,1-Dichloropropene	ug/l	20	23.51	118	
Carbon Tetrachloride	ug/l	20	23.74	119	
Dibromomethane	ug/l	20	20.26	101	
1.2-Dichloropropane	ug/l	20	21.98	110	
Trichloroethene	ug/l	20	20.92	105	
Bromodichloromethane	ug/l	20	22.15	111	
cis-1,3-Dichloropropene	ug/l	20	19.64	98.2	
trans-1,3-Dichloropropene	ug/l	20	19.10	95.5	
1.1.2-Trichloroethane	ug/l	20	19.89	99.5	
1.3-Dichloropropane	.ug/l	20	19.52	97.6	
Dibromochloromethane	ug/l	20	19.75	98.8	
1,2-Dibromoethane	ug/l	20	19.69	98.4	
Tetrachloroethene	ug/l	20	22.13	111	
1,1,1,2-Tetrachloroethane	ug/l	20	19.17	95.8	
Chlorobenzene	ug/l	20	22.79	114	
Bromoform	ug/1	20	19.17	95.8	
1,1,2,2-Tetrachloroethane	ug/l	20	20.58	103	
1.2.3-Trichloropropane	ug/1	20	23.10	115	
Bromobenzene	ug/l	20	22.58	113	
2-Chlorotoluene	ug/l	20	20.82	104	
4-Chlorotoluene	ug/l	20	22.55	113	
1,3-Dichlorobenzene	ug/l	20	22.47	112	
1.4-Dichlorobenzene	ug/l	20	22.19	111	
1.2-Dichlorobenzene	ug/l	20	21.99	110	
1.2-Dibromo-3-Chloropropane	ug/l	20	22.25	111	
1.2.4-Trichlorobenzene	ug/1	20	21.92	110	
Have als 7 and to the 12 and				110	

Laboratory Certification IDs NC Wastewater 12 NC Drinking Water 37706 SC 99006 ug/l

20

23.88

Hexachlorobutadiene

119

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QUALITY CONTROL DATA

DATE: 09/23/99

PAGE: 23

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

LABORATORY CONTROL SAMPLE: 9263	34567				
		Spike	LCS	Spike	
Parameter	Units	Conc.	Result	% Rec	Footnotes
1,2,3-Trichlorobenzene	ug/l	20	22.91	115	
Methyl-tert-butyl Ether	ug/1	20	21.44	107	
Isopropyl Ether	ug/1	20	21.55	108	
Benzene	ug/l	20	17.94	89.7	
Toluene	ug/1	20	21.16	106	
Ethylbenzene	ug/1	20	21.70	109	
m&p-Xylene	ug/1	40	43.42	109	
Styrene	ug/l	20	18.91	94.5	
o-Xylene (1,2-Dimethylbenzene)	ug/1	20	21.14	106	
Isopropylbenzene (Cumene)	ug/l	20	21.96	110	
n-Propylbenzene	ug/l	20	22.87	114	
1.3.5-Trimethylbenzene	ug/l	20	22.11	111	
tert-Butylbenzene	ug/l	20	21.98	110	
1,2,4-Trimethylbenzene	ug/l	20	21.73	109	
sec-Butylbenzene	ug/l	20	21.22	106	
p-Isopropyltoluene	ug/1	20	21.02	105	
n-Butylbenzene	ug/l	20	21.57	108	
Naphthalene	ug/1	20	19.22	96.1	
1-Chloro-3-fluorobenzene (S)				110	

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> Tel: 704-875-9092 Fax: 704-875-9091

DATE: 09/23/99 PAGE: 24

Pace Project Number: 928662

Client Project ID: NC000589.0001.00002

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND Not Detected
NC Not Calculable
PRL Pace Reporting Limit

RPD Relative Percent Difference

(S) Surrogate

[1] Possible laboratory contaminant.

[2] Recovery falls outside of QC limits, however, this compound is not found in the associated samples.

[3] The surrogate and/or spike recovery was outside acceptance limits.

					······································									
ARCADIS GERAGHTY&MILLER		ratory Task Or			1.5 5.3 3.6	CHAIN-OF-CUSTODY RECORD Page / of 1								
Project Number/Name//	<u>'८०७७</u>	589.00	<u>) 1.</u> 00	ಎಎ ೭	,	ANALYSIS / METHOD / SIZE								
Project Location	0	UC-Di=	even+	Cleane	rs/ :	\$/ / / / /								
Inhoratory Pace					/ •••	/	/	/	/	/ /	866	2		
Project Manager /4	# 1	Leson			2 3	. /								
Project Manager // / Sampler(s)/Affiliation //	1,1300	thers A	16+14	20 0										
Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	13 6	X ¹ / :					Rem	arks	Total		
15w - 1	w	9/9/99/945	-	4						10237	19	4		
My W - Z	W	1 1605		4	:				4.	62378	27	4		
17W-5	W	1530		4		v				6237	32	4		
17W-6	W	1230		4						(2374	13	4		
Duplicate	w	V		4		****				6237.	20	4		
1962-3		1641818		-4/10	7									
15W4	W	1645	•	4						62371		4		
17W-3	W	1715		4						6237		4		
Trip Blanks	w			<u>z</u>	<u> </u>					. 6237	84			
				<u> </u>			-							
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Sample Matrix: L = Liqui	d; S =	= Solid; A =	Air	1	·.				<u> </u>	Total	No. of Bott			
Relinquished by: /) F. Received by:	Reru	45	Organiz Organiz		ace			ate <u> </u>	9 199	Time		eal Intact? No N/A		
Relinquished by:			Organiz Organiz					ate/_	1	Time		eal Intact? s No N/A		
Special Instructions/Remarks:														
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ARCADIS GERAGHTY&MILLER

COMPREHENSIVE SITE ASSESSMENT REPORT

APPENDIX F

Data Review and Validation

DATA REVIEW AND VALIDATION

The purpose of this section is to evaluate the field and laboratory analytical data (Pace Analytical Services, Inc. (Pace) project No. 928662) for the completeness of data package deliverables (Reporting Level II). The groundwater and associated QC sample data were validated following the rules set forth in the Functional Guidelines for Evaluating Organic Analyses (USEPA, 1994). Additionally, all field records were reviewed to verify the completion of required documentation.

1.0 Field Quality Assurance Components

All field activities were appropriately documented on groundwater sampling logs. The groundwater and associated QC samples collected during the field sampling program for VOCs analysis (Standard Method [SM] 6230D) were appropriately labeled, stored in sample containers on ice, and sent via a courier to PACE in Huntersville, North Carolina.

A trip blank sample accompanied the groundwater and QC sample for VOC analysis. Additionally, a duplicate sample of primary sample MW-5 was collected. All samples were forwarded to PACE with chain-of-custody forms. Copies of these forms are included in Appendix E.

The groundwater samples were analyzed in the field for pH, specific conductivity, and temperature.

2.0 Analytical Quality Assurance Components

All groundwater and associated QC samples collected and sent to PACE were received in good condition and were analyzed within the required holding time periods. Deviations from QC standards are discussed below. With the exception of the deviations reported herein, all sample QC parameters were within established control limits or did not result in data qualification. The attached data are valid and usable within the confines of this review.

2.1 Volatile Organic Compounds

The required quantitation limits were reported with the exception of sample MW-6, which was diluted 1:10 and 1:100 because of elevated VOC concentrations. VOCs were not detected in the associated QC method blank sample (2.2 ug/L) and Trip Blank sample (2.2 ug/L), with the exception of methylene chloride. The following samples

had methylene chloride concentrations below the action level of 22 ug/L and were qualified as nondetected: MW-1 (9.2 ug/L), MW-3 (2.0 ug/L), MW-4 (9.6 ug/L), MW-5 (6.9 ug/L), Duplicate (3.5 ug/L), and MW-6 (1.9 ug/L). The surrogate, laboratory control sample (LCS), and MS/MSD recoveries and relative percent recoveries (RPDs) were within QC limits with the exception of MS/MSD and LCS recoveries, which were above the upper control limits. No action, however, was required based on these advisory QC sample data. The field duplicate sample criteria were not met for methylene chloride. The data for this compound in samples MW-5 and Duplicate, therefore are qualified as estimated and flagged "J." No other deviations resulting in data qualification were noted for the soil sample VOC analyses.

3.References

USEPA, 1994. National Functional Guidelines for Evaluating Organic Analyses,
Office of Solid Waste and Emergency Response, Contract Laboratory Program.
EPA/540/R/94/090. December